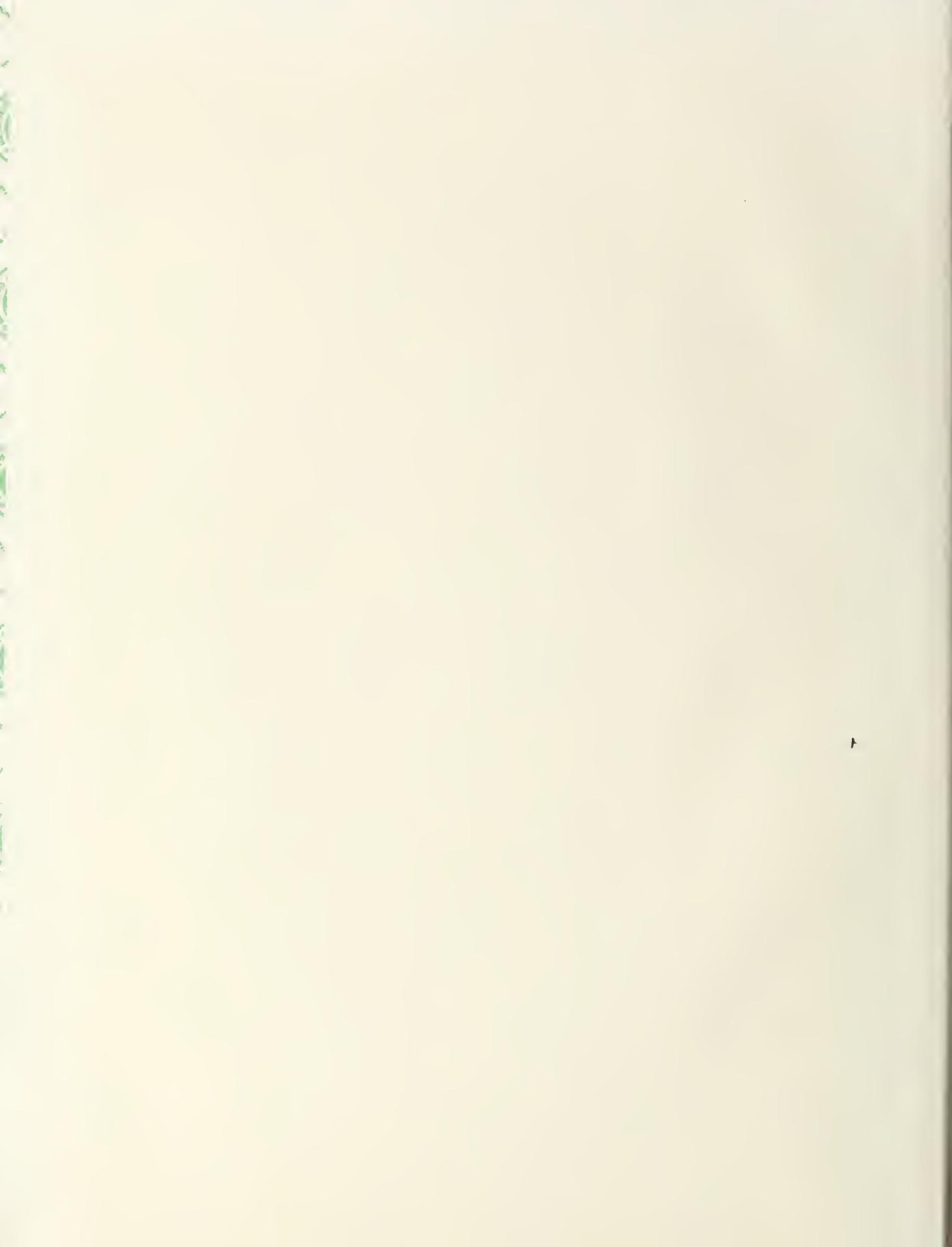


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1953

MARKET ORGANIZATION AND FACILITIES

A Report of the
National Marketing
Workshop

August 7 to 15, 1953 - University of California



U. S. DEPARTMENT OF AGRICULTURE
Agriculture Research Administration
Cooperating with Land-Grant Colleges

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INTRODUCTION 1/

The purpose of the Marketing Workshop held in 1953 and those planned for 1954 and 1955 is to increase the effectiveness of research, service and educational work in agricultural marketing by providing persons engaged in such work with the opportunity to clarify objectives, improve methodology, and increase the effectiveness of such work with special attention to the contributions of and interrelationships among research, service and educational programs in the solution of specific marketing problems. The specific purpose of the 1953 Workshop was "To improve the effectiveness of research, service and extension work dealing with the organization and facilities for the marketing of agricultural products by providing those engaged in such work with the opportunity to strengthen their professional competence."

Emphasis given to marketing work by the Research and Marketing Act of 1946 created a need for a training program. Initial impetus was given to improvement of training of professional workers in the field of agricultural marketing by the Joint Land Grant College - USDA Committee on Training for Government Service under the co-chairmanship of C. E. Friley, former President of Iowa State College, and T. Roy Reid, Director of Personnel of the Department of Agriculture.

The 1953 Workshop was a direct outgrowth of Marketing Research Workshops held in 1949, 1950, 1951 and 1952. At the closing session of the 1952 Workshop it was recommended that an annual Workshop for those engaged in marketing research be continued for three more years and that there be more opportunity for exchange of ideas between those engaged in marketing research and those doing educational and service work in the marketing of agricultural products.

A committee representing the three state agencies engaged in marketing work and the Department of Agriculture developed broad plans for three Workshops. These plans were approved by the Land Grant College Association following approval by the Experiment Station Committee on Organization and Policy, the Extension Committee on Organization and Policy, and the Joint Committee on Training, and also by the Marketing Advisory Committee of the State Departments of Agriculture. These plans provided for Workshops for research, service and extension workers to be held:

1. In 1953 in a Western State on the topic: "Modernizing Market Organization, Structure and Facilities;

1/ Prepared by Barnard Joy, Assistant to the Administrator, Agricultural Research Administration, and Executive Secretary of the Workshop.

2. In 1954 in a Northeastern State on the topic: "Developing and Applying Information for Effective Buying and Selling."
3. In 1955 in a Midwestern or South Central State on the topic: "Obtaining Efficient Use of Labor, Equipment and Other Market Resources."

The membership of this committee was:

Paul Nystrom, Head, Department of Agricultural Economics and Marketing, University of Maryland, College Park, Maryland - Chairman
H. C. Bond, Professor of Marketing and Extension, Cornell University, Ithaca, New York
A. J. Brown, Head, Department of Agricultural Economics, College of Agriculture, University of Kentucky, Lexington, Kentucky
J. A. Winfield, Director of Division of Markets, State of North Carolina, Raleigh, North Carolina
Earl Glover, Production and Marketing Administration, USDA
R. C. Scott, Extension Service, USDA
H. Southworth, Bureau of Agricultural Economics, USDA
H. C. Trelogan, Agricultural Research Administration, USDA
- Consultant
Barnard Joy, Agricultural Research Administration, USDA
- Secretary

The co-chairmen of the Joint Committee on Training were authorized to appoint committees to develop plans for and to assist with the conduct of each Workshop. The membership of the committee for the 1953 Workshop was:

R. G. Bressler, Director, Giannini Foundation, University of California, Berkeley, California - Chairman
Wendell Calhoun, Bureau of Agricultural Economics, USDA, Berkeley, California
C. J. Carey, Chief, Division of Marketing, California State Department of Agriculture, Sacramento, California
G. Alvin Carpenter, Assistant Director, Agricultural Extension Service, Logan, Utah
W. H. Elliott, Marketing Facilities Research Branch, Production and Marketing Administration, USDA, Washington, D.C.
A. H. Harrington, Head, Department of Agricultural Economics, College of Agriculture, Pullman, Washington
R. C. Scott, Extension Service, USDA, Washington, D. C.

Barnard Joy, Assistant to the Administrator, Agricultural Research Administration, USDA served as secretary of the committee and as executive secretary of the Workshop.

The program developed by the committee was approved by the Joint Committee on Training at its meeting held April 24, 1953.

Directors of Experiment Stations, Directors of Extension Services and Commissioners of Departments of Agriculture in each of the states and Chiefs of Federal agencies were asked to send representatives who were engaged in marketing research, extension, and service work dealing with market organization and facilities.

Experiment Station Directors in 17 states responded to this invitation by sending 19 representatives; Extension Directors in 9 states sent 10 representatives; Commissioners of Agriculture in 6 states sent 11 representatives; Chiefs in 9 Federal agencies sent 20 representatives. These 60 persons with 16 members of the staff of the Berkeley campus of the University of California and 6 from other campuses and colleges in California made up the group of 82 that participated throughout as members of the Workshop. In addition, there were five speakers who were unable to stay for a sufficient length of time to participate in work group meetings and several guests who attended one or more of the general sessions.

Background material that stimulated the thinking of the group was given in 9 presentations made at 8 general sessions. Approximately one-half of the 18 hours spent in 11 general sessions was devoted to presentations by speakers and one-half to questions and discussion from the floor.

The membership of the Workshop was divided into 6 groups. Each of these groups had 9 sessions totaling 17 hours and 30 minutes. The secretary of each group prepared a report on the topic considered by the group. The last four general sessions were devoted to presentation of these six reports and discussion of them by the entire membership.

The group thinking processes utilized throughout the Workshop recognized that each participant was expected to contribute from his own experience and was expected to receive help from the contributions made by other participants. Emphasis was placed upon each participant becoming acquainted, personally, with each other participant so that the helpful exchange of ideas would take place during meals and other free periods, as well as during scheduled sessions.

Four tours and five dinner meetings provided opportunity to take advantage of some of the many interesting resources available at or near the University of California. Some of these were not directly related to marketing. An important characteristic of the Workshop was its flexibility. Ad hoc meetings were scheduled for those who had a common interest in a particular problem.

In addition to providing transportation and very excellent accommodations for meetings, meals and lodging, the University of California staff under the leadership of R. G. Bressler, Jr., and D. A. Clarke, Jr., chairman of the committee on local arrangements, provided for a variety of recreational activities. They also provided secretarial service and service for duplicating the presentations made at general sessions.

At its final session the Workshop adopted resolutions expressing appreciation to the University of California and members of its staff for the fine accommodations, for the contributions to the program and for "delightful hospitality"; to State Experiment Station Directors; Extension Directors and Commissioners of Agriculture, and Agency Heads for making possible the attendance of members of their staffs; and to the Land Grant College Association and the Agricultural Research Administration for their sponsorship of the Workshop.

PROGRAM

Thursday, August 6

1:00 - 8:00 Registration, Lobby, Fernwald Hall
8:00 - 10:00 Get acquainted coffee hour, Fernwald Hall
Courtesy of Agricultural Economics Staff,
University of California

Friday, August 7

9:00 - 10:45 General Session Room 120

Chairman R. G. Bressler, Director
Giannini Foundation
University of California

The Need for Modernizing Market Organization,
Structure, and Facilities
F. R. Wilcox, Assistant General
Manager, Sunkist Growers
Los Angeles, California

Plans for Work Group Meetings
Barnard Joy, Assistant to the
Administrator, ARA, and Executive
Secretary of the Workshop

11:00 - 11:45 Work Group Meetings

Work Group A - Room 137
Shipping Point and Terminal Markets

Chairman W. H. Elliott, Staff Assistant
Marketing & Facilities Research
Branch, Production & Marketing
Administration

Secretary R. B. Donaldson, Professor, Agricultural
Economics Extension,
Pennsylvania State College

Consultant Laurence A. Bevan, Director
Cooperative Extension Service
University of New Hampshire

Friday, August 7 (Continued)

Work Group B
Processing, Transportation,
and Storage Facilities

Room 133

Chairman Bennett S. White, Jr., Head
Division of Marketing & Transpor-
tation Research, Bureau of
Agricultural Economics

Secretary J. C. Winter, Staff Assistant for
Transportation, Marketing &
Facilities Research Branch
Production & Marketing Administration

Consultant John A. Winfield, Director, Division
of Markets, N. C. Department of
Agriculture

Work Group C -
Retail Markets

Room 131

Chairman Raymond C. Scott, Extension Econ-
omist, Extension Service

Secretary Owen L. Brough, Jr., Associate Prof.,
Department of Agricultural Econ-
omics, State College of Washing-
ton

Consultant Paul E. Nystrom, Head, Department
of Agricultural Economics and
Marketing, University of Maryland

Work Group D --
Principles of Market Organization

Room 110

Chairman, R. G. Bressler, Director, Giannini
Foundation, University of
California

Secretary John G. McNeely, Professor of Agricul-
tural Economics, College of
Texas A and M

Consultant W. C. Crow, Director, Marketing and
Facilities Research Branch, Pro-
duction & Marketing Administration

Friday, August 7 (Continued)

Work Group E - Room 135
Market Regulation and Control

Chairman C. J. Carey, Chief, Division of Marketing, California Department of Agriculture

Secretary J. S. Hillman, Assistant Professor Agricultural Economics University of Arizona

Consultant H. C. Trelogan, Assistant Administrator, Agricultural Research Administration

Work Group F - Room 130
Economic and Engineering Methods in Marketing Research

Chairman F. C. Winter, Consulting Industrial Engineer, Tarenec, New Jersey

Secretaries B. C. French, Cooperative Agent, California-BAE, University of California
L. L. Sammet, Cooperative Agent, California-BAE, University of California

Consultant Robert M. Walsh, Deputy Assistant Administrator of Marketing Agricultural Research Administration

1:00 - 3:00 General Session - Room 120

Chairman W. W. Armentrout, Head, Department of Agricultural Economics & Rural Sociology, West Virginia Univ.

Barriers to Market Improvement
H. C. Trelogan, Assistant Administrator, Agricultural Research Administration

6:00 Dinner Meeting - Fernwald Hall

Chairman H. R. Wellman, Vice President, Agricultural Sciences, University of California

Friday, August 7 (Continued)

The California Department of Agriculture
W. C. Jacobsen, Assistant Director
California Department of Agriculture

The University of California
E. C. Voorhies, Vice Chairman, Department of Agricultural Economics
University of California

Saturday, August 8

8:15 ~ 9:45 General Session - Room 120

Chairman R. B. Donaldson, Professor of Agricultural Economics Extension
Pennsylvania State College

Research, Service and Extension --- Partners in the Solution of Marketing Problems
Paul E. Nystrom, Head, Department of Economics and Marketing
University of Maryland

10:00 ~ 11:45 Work Group Sessions

1:00 ~ 3:00 Three sectional meetings for:

(1) Research Workers Room 110

Chairman R. M. Walsh

(2) Members of Staffs of State Departments of Agriculture and Bureaus of Markets Room 120

Chairman J. A. Minfield

(3) Extension Workers Room 130

Chairman Laurence A. Bevan

Sunday, August 9

9:00 ~ 6:00 Tour of San Joaquin-Delta area

- 9 -

Sunday, August 9 (Continued)

6:30

Dinner

Fernwald Hall

Chairman D. A. Clarke, Jr., Asst. Professor
Agricultural Economics
University of California

Movie: "Better Oranges" - Courtesy of Food Machinery
and Chemical Corporation

Monday, August 10

8:15 - 9:45

General Session -

Room 120

Chairman Wendell Calhoun, Agricultural Economist
Bureau of Agricultural Economics
Berkeley, California

Problems and Progress in the Improvement of Market
Facilities W. C. Crow, Director, Marketing
and Facilities Research Branch
Production & Marketing Admin.

10:00 - 11:45 Work Group Sessions

11:45 - 3:00 Tour and lunch at Lucky Store warehouse

3:15 - 5:15 Work Group Sessions

Tuesday, August 11

8:15 - 9:45

General Session

Room 120

Chairman I. C. Haut, Director, Agricultural
Experiment Station, College Park
Maryland

Interactions between Technology and the Food Marketing
Process W. B. Van Arsdel, Associate Director
Western Regional Research Laboratory

Impact of Mechanization on Agricultural Marketing and
Production C. G. Barr, Senior Biologist
Central Research Department
Food Machinery & Chemical Corp.

10:00 - 11:45 Work Group Sessions

Tuesday, August 11 (Continued)

1:00 - 3:00 Work Group Sessions
3:15 Tour of Western Regional Research Laboratory
Albany, California

Wednesday, August 12

8:15 - 9:00 General Session Room 120
Chairman Hugh A. Johnson, Agricultural Economist
Agricultural Experiment Station
Palmer, Alaska
Research in Market Organization and Facilities:
Appraisal of Current Work and Future Need
Robert M. Walsh, Deputy Assistant
Administrator, Agricultural
Research Administration
9:15 - 11:45 Work Group Sessions
1:00 - 3:00 General Session Room 120
Chairman W. B. Stout, Experiment Station
Administrator, Office of Experi-
ment Stations
Discussion of research in market organization and
facilities, including reports from Work Groups A,
B and C.
3:00 - 9:30 Tour of Muir Woods-San Francisco

Thursday, August 13

8:15 - 9:00 General Session Room 120
Chairman B. M. Morell, Head, Division of
Agricultural Economics
Department of Agriculture of
Puerto Rico
Service Programs of State Departments of Agriculture
and Bureaus of Markets to Improve Market Organization
and Facilities: Appraisal of Current Work and Future
Needs J. A. Winfield, Director, Division
of Markets, North Carolina
Department of Agriculture

Thursday, August 13 (Continued)

9:15 ~ 11:45 Work Group Sessions

12:00 ~ 2:00 Luncheon Meeting - International House

Chairman G. L. Mehren, Professor
Agricultural Economics
University of California

The Role of Marketing in Our Dynamic Economy
..... O. V. Wells, Chief, Bureau of
Agricultural Economics

2:00 ~ 4:00 General Session Room 120

Chairman M. A. Faller, Executive Secretary
Louisiana State Market
Commission

Discussion of service programs in market organization
and facilities, including reports from Work Groups A,
B and C.

6:00 Dinner Meeting Fernwald Hall

Chairman Eldon Wittwer, Chairman, Department
of Agricultural Economics
University of Nevada

Agricultural Policy and Its Impact upon Market
Organization O. B. Jesness, Head, Department
of Agricultural Economics, University of Minn.

Friday, August 14

8:15 ~ 9:00 General Session Room 120

Chairman John J. McElroy, Director of
Programs, California Extension
Service

Extension Programs to Improve Market Organization
and Facilities: Appraisal of Current Work and
Future Need L. A. Bevan, Director, Extension
Service, University of New Hampshire

9:15 ~ 11:45 Work Group Sessions

Friday, August 14 (Continued)

1:00 ~ 3:00	General Session	Room 120
	Chairman H. M. Dixon, Chief, Division of Agricultural Economics Extension Service	
	Discussion of extension programs in market organiza- tion and facilities; including reports from Work Groups A, B, and C.	
3:15 ~ 5:00	General Session	Room 120
	Reports of Work Groups D, E and F	
6:00	Dinner Meeting	Fernwald Hall
	Summary of the Workshop	

MEMBERSHIP OF THE WORKSHOP

Abbott, J. C. Junior Specialist in Agricultural Economics, University of California, Berkeley, California

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Allewelt, W. F. Chief, Bureau of Shipping Point Inspection, California State Department of Agriculture, Sacramento, California

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Armentrout, W. W. Head, Department of Agricultural Economics and Rural Sociology, West Virginia University, Morgantown, West Virginia

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Wilcox, F. R. Assistant General Manager, Sunkist Growers, Inc. Los Angeles, California

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Wilson, Ed., Jr. Assistant Director, Marketing Division, State Department of Agriculture, Oklahoma City, Oklahoma

Windham, W. J. Instructor and Junior Rural Economist, Department of Rural Economics and Sociology, University of Arkansas, Fayetteville, Arkansas

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Winter, F. C. Consulting Industrial Engineer, Taeneck, New Jersey
and Consultant, Marketing and Facilities Research
Branch, Production and Marketing Administration,
USDA, Washington, D. C.

Winter, J. C. Staff Assistant for Transportation, Marketing and
Facilities Research Branch, Production and
Marketing Administration, USDA, Washington, D. C.

Wittwer, Eldon Chairman, Department of Agricultural Economics,
University of Nevada, Reno, Nevada

Presentation at General Session
Friday morning, August 7

THE NEED FOR MODERNIZING MARKET ORGANIZATION, STRUCTURE AND FACILITIES

F. R. Wilcox, Assistant General Manager
Sunkist Growers, Inc.
Los Angeles, California

California is honored to have the National Marketing Workshop in Berkeley. I am sure other organizations join me in inviting you to inspect the marketing facilities which are available to farm people in this state.

Department of Agriculture data show that 52 percent of the 1952 consumer dollar was absorbed in the marketing process. Consequently the subject assigned to me is of major importance to both consumers and producers. It also indicates that there may be some possibility of further improvements, most of which must result from research conducted by business and public institutions.

This group will recognize the close relationship between production and marketing and for that reason I should like to emphasize the importance of continued improvement in the field of production of foods and fibers. Many of the marketing problems in this state are directly related to production. Typical of these problems is the production of small-sized oranges over the past several years which is the number one job to correct in our industry. I should like to assume that in the further discussion of our marketing problems we can rely on improved production both with respect to quantity and quality.

A starting point for market research might well be in the field of utilization. In my opinion, the outstanding success of research during the last two decades has been the development of new products and new uses. In spite of the progress, this field offers great opportunities. I am sure that the substantial increased production of citrus fruits has been absorbed at reasonably fair prices only because of the development of new consumer products. The cotton industry is doing much in this field to strengthen cotton's competitive relationship to synthetic materials and will do much to bring together supply and demand, provided prices are not held at a fictitiously high level over a long period of years.

Research work having to do with new products logically takes on two aspects; first, the physical development of products themselves which requires laboratory facilities and technique which ordinarily cannot be supplied by farm people. This is a logical field for development by federal and state institutions and I would encourage the full use of commercial laboratories wherever proper relationships can be developed and where producers will share in the benefits. The second phase of this work, which has been largely neglected, has to do with studies involving consumer acceptability.

Little value will result from the development of products unless consumers are willing to make purchases. It would seem to me that the Bureau of Home Economics working with state universities could well devote a portion of their time to a practical survey of consumer wants. Such a survey would not only involve the acceptability of products but would also involve such things as packaging, size of container, and pricing.

In connection with utilization, I think we have failed in some instances to stress sufficiently the use of many farm products in their natural form which in many instances best serves both producers and consumers. In this connection the "Freshness" program now being conducted under the supervision of the United Fresh Fruit and Vegetable Association should serve as a testing ground for research workers in this field.

The importance of preparing farm products for markets is well understood but here again changing consumer habits and facilities make this a fertile field for research work. Preparation costs are high and the effort to reduce costs should receive full attention. In this connection I use our own industry as an example of definite improvement brought about through research efforts of the University of California and the Department of Agriculture. A recent study made by Drs. Tinley and Smith indicate a savings in the packaging of lemons of 36¢ per packed box which represents a reduction of about 22 percent from the former cost. If this saving can also be made in oranges and grapefruit, it will represent an annual saving to the citrus industry in California of \$10,000,000. In this field particularly I want to urge close working relationships between research agencies and industry. Without this I think we lose the advantage of experience and also in many instances fail to have the new findings accepted by the operating end of the industry. It is my opinion that substantial savings in research expenditures can be made if industry facilities and "know-how" are used. Again merely for purposes of example I point out that our own industry has established an industrywide committee charged with the responsibility of working with research people having to do with the physical handling of fresh citrus fruits.

Transportation of farm food products involves an estimated annual expenditure of \$2½ billion. Before outlining some fields of work, I should like to commend our existing transportation organizations for the relatively small increases of costs for transportation as compared to most other services. We have experienced an increased cost between 1940 and the present time of 37 percent in transportation. This compares to an increase of over 100 percent in most other segments of our costs. In spite of this, improvements not only cost-wise but in the matter of service can be made. One has to do with refrigeration before, during and subsequent to actual hauling. In spite of the fact that fan cars have definitely proved their value, I am advised that only about half of the present reefer cars are equipped with fans. Savings in reefer costs through mechanical refrigeration should be studied more intently. Here again I would encourage close cooperation between the public agencies, railroads, and others. Isolated pieces of research would be futile and more costly than is necessary.

I am also convinced that there needs to be basic studies in the field of transportation looking towards faster service for perishable products and also the relationship between rail, truck, and possibly other types of transportation services. More and more of our perishables, and I am sure other products on the Pacific Coast, are being hauled by truck. This has resulted in less business for railroads, which according to basic principles, would prevent substantial decreases in rail transportation costs. The relationships between costs and the various types of transportation facilities need to be analyzed much more completely than has been done.

In the matter of transporting farm products a careful analysis of future barriers needs to be made. This involves future restrictions on highways, state inspection service, and state regulations having to do with packaging and the quality of merchandise which is permitted to be sold. Most of these matters should be handled on a national basis rather than through the establishment of state barriers based upon the various political interests of forty-eight geographical divisions.

Statistical reports indicate that the so-called trade margins, including wholesaling, jobbing, and retailing, absorb from 25 percent to as much as 80 percent of the price paid by consumers for food and fibers. There is no indication that any of these charges under present conditions are excessively high. If they were it would perhaps be an inducement under our free enterprise system for new persons to enter the field. It therefore seems to me that any research work should be directed toward improving basic conditions in the field of merchandising rather than directed at a rather common accusation that costs are too high. In this connection I am very critical of the work which has been done to date. In my opinion it has been directed merely at the accumulation of great masses of data having to do with wholesale and retail prices. I am sure much of these data could have been furnished by marketing agencies such as our own. Furthermore, I think so much data has been accumulated that it has prevented a careful analysis of the material and has overshadowed any possible practical conclusions. I would refer specifically to studies in Pittsburgh and Cleveland made in 1950 which were just released and which in my opinion, at this late date, give little or no information upon which one can base any modifications of a sales program. Some years ago a study was started in Denver, Colorado. To date we have had no results of this work.

Rather than just being critical I should like to suggest some practical lines of approaching this very important field. First, I think any studies of retailing and wholesaling need to analyze costs rather than charges. I have been told that this is quite impossible. In my opinion that is not so. Our state institutions and others throughout the country made definite and accurate studies of farm production costs which separate not only profits but such items as depreciation and interest. It is this type of study which should be made rather than the types of studies which have been in progress. The next field of study should be the actual handling of merchandise both through wholesale and resale distributors. Here I should like to commend the work done by the Department in connection with terminal facilities. These have and will continue to serve as a sound basis for

improvement. I also feel that the funds spent through the United Fresh Fruit and Vegetable Association teaching improved handling have been very worthwhile. There is still much room for further work along these lines and again it is essential to collaborate closely with industry because it does little good to amass piles of statistics or to make even practical recommendations unless they can be put to practical use. Let's suppose, for example, that we do find the costs of retailing for any given commodity were too high. We need to know what to do about it and that involves relationship with top management in the field of wholesaling and retailing.

In this connection also I should like to suggest an acceleration of studies which will throw some light on methods of selling farm products. Some years ago the University of California made a confidential preliminary study for our own organization showing the relationship between the price in auction markets and the price in private sale markets. At the present time many sales devices are used. Perhaps they are all desirable. Perhaps they are being used simply because someone started them and they have a historical background. With the exception of studies on pricing, I recognize that this is perhaps the most difficult segment of the whole marketing picture to analyze. Yet in my opinion it offers real opportunities and so I would suggest that the methods of marketing such as f.o.b., delivered, auction, and others be studied with only top people participating.

Next in this field I would suggest consideration be given to research work in the field of advertising which is becoming more important and which is a sound program to be conducted by farm people. This somewhat relates to my previous comments concerning consumer acceptability and yet I think it offers opportunities for not only the specialty industries but the major agricultural industries such as dairy and beef cattle. I was quite amazed some few weeks ago to be present at a livestock meeting in Washington and hear them discussing with some skepticism the desirability of increasing the advertising assessment against the livestock producers from 50¢ to \$1.00 per car. In citrus we have long spent as much as \$30.00 per car on fresh fruit and would be fearful of reducing it under the highly competitive food conditions which exist today. We have found the material, which has been jointly accumulated with federal funds and industry funds, of Market Research Corporation of America valuable in our analysis of market opportunities in directing our advertising and merchandising efforts.

I should like to make some general comments merely for further discussion of this group which can do much towards directing and redirecting research efforts. First, I strongly urge continuing workshops such as this. I think they give the opportunity to review research work in the field of marketing and to weed out those projects which will not be beneficial and in redirecting efforts which will more nearly result in improved marketing facilities and programs. I hope that the results of this meeting will be made available not only to state and federal institutions but also to operating marketing groups throughout the entire country. Next, I should like to encourage increased facilities for analyzing the results of research work. Not many farm people and not a great number of farm

organizations have the facilities to properly analyze research material which is given to them. I think that the Extension Service and other groups lag behind in the field of marketing and economics. It is my opinion that the dollar value of research expenditures could be doubled if the piles of material could be analyzed on a practical basis and utilized by marketing groups with the aid of trained people to work with them. Next, I should like to encourage more complete cooperation in the development of research projects and in the actual research work itself between public agencies and operating groups. It might even be desirable that private agencies contribute either money or manpower before research projects were undertaken for their respective industries.

The timeliness of market research is a most important factor. No one realizes more than I the importance of analyzing constantly many of our marketing problems in the light of our industrial growth, changing conditions, and changing consumer habits and yet I feel that much of the marketing research must be done promptly and the results made available on a minimum time basis. In this respect progress reports can frequently be given to the industries with full recognition that final results may be obtained only in the future.

Lastly, I should like to urge that this group fully recognize the importance of highly trained people qualified to do economic and marketing research work. I am not satisfied with the number and caliber of persons who are being attracted into this field in graduate schools and believe that industry and government jointly should develop a program which would attract the best minds to this field.

Presentations at General Session
Friday afternoon, August 7

BARRIERS TO MARKET IMPROVEMENT

Harry C. Trelogan, Assistant Administrator
Agricultural Research Administration

Observation of old world markets for agricultural products provided an interesting background for discussion of the topic, "Barriers to Marketing Improvement." A recent experience, my first trip to Europe, gave me an opportunity to make such an observation. It was a most enlightening experience particularly from the standpoint of obtaining a better impression of how far we have progressed in the United States compared with areas from which our society, our culture, and our economic system came.

The experience moves me to eliminate any implication that might be read into the topic to the effect that we have not had market improvement in this country. Our standards of sanitation, labor efficiency, and market services are so much higher than those in the parts of Europe that I saw that the question comes to mind: How can these archaic methods continue to exist in nations of enlightened people who presumably have access to all the knowledge and examples of what has been done here? An answer cannot be given quickly or easily, but some of the causal factors that occur to me can be cited and can be drawn upon to develop the subject at hand.

The incentive to change, to progress as we like to think, does not exist in the same degree there as here. Where labor is relatively plentiful and cheap, there is less incentive to develop labor efficiency. Where temperatures are relatively low, there is less need to employ sanitary precautions. Where there is less opportunity for profit, there is less drive to beat the competition.

Progressive change requires the expenditure of resources. Capital tends to be substituted for labor or land. Where capital and material resources are scarce, the opportunity to introduce change does not exist in the same degree as where they are plentiful.

Habits, customs, and traditions are barriers to progress. The longer they exist, the more they persist. Associated with this is the fact that changes in any one part of a marketing system are dependent upon adjustments in other parts. Rigidity at any point, such as in the wholesaling, retailing, or consumer buying, tends to impose rigidities upon the other points in the system. They all have to be attuned to each other.

Political institutions have a profound effect upon the ability to progress. Where they limit areas of trade through the imposition of political boundaries that are associated with the imposition or preservation of different languages, measurements, monetary systems, and regulations, the handicaps to progressive change become well-nigh insurmountable.

The presentation of such generalizations, drawn from observation in remote places, may be interpreted as avoiding the subject which has been assigned to me for today. I prefer to regard it as a prelude that suggests problems close at hand that do not differ in kind but only in degree. The favorable impression of progress made in this country should not divert attention from the opportunities for further progress, nor from the barriers preventing us from taking full advantage of the opportunities.

Superiority of Resources

By comparison we have less potential for market improvement than I have noted elsewhere on the grounds that we are so far ahead but this is in no sense a barrier when consideration is given to the advantages we enjoy for achieving further improvement. Our resources are far superior in almost every respect. Our facilities, equipment, and supplies for marketing are unexcelled. Moreover, we have the industries, the commerce, and capital to develop still better materials and facilities. In only a few instances did I see innovations there that appeared to offer advantages over what we have here. One of these was the mechanized auction system widely used in Holland.

Our people, our clientele if you wish, whether they be farmers, market operators or consumers, are more conditioned to change. They have seen so much of it in their lifetime, they have been favorably impressed with its contribution to higher living standards, that they accept change notwithstanding all the nostalgic references to the good old days. As a matter of fact, our citizens tend to look with contempt and suspicion on industries that have not exhibited change. The charge that something has not changed in twenty years is a serious approbation here.

Our labor is healthier, better educated and above all has know-how more widely distributed than elsewhere. This is particularly true of mechanical know-how upon which so much of our progress has been based.

Science Ahead of Practice

Our science is ahead of our practice. We have in this country a vast store of technological knowledge and developments that remains to be fully utilized or exploited. This has been amply demonstrated in the field of agricultural production by Dr. B. T. Shaw of the Agricultural Research Administration. I am satisfied it is also true in agricultural marketing. In relatively few instances can lack of market improvement be attributed to an inability to devise suitable physical or mechanical means. In far more instances it can be attributed to a lack of application of known devices or methods. Actually, many of the advances that can be made in farm production through improved breeding, cultural or harvesting practices are held up by existing marketing practices that fail to provide the protection or reflect the values for the improved quality products. I cite the situations of mechanically harvested potatoes and of meat-type hogs as examples. Conversely, as Mr. Wilcox indicated, some marketing advances await improvements in production.

Economic Changes Behind Technological Developments

In general, changes of an economic or social character have not kept pace with technological developments. To make this observation more concrete I cite the example of the fluid milk industry with its restricted supply areas. This example is selected not because it is unique but because it seems to be more widely recognized. Technological progress has long since made it possible to obtain safe urban milk supplies from wider areas or in different forms at less cost, but man-made impediments prevent the adoption of the practices.

What then are the barriers to market improvement of this sort? They may be traced to the minds of men. In part it is a matter of lack of comprehension of opportunities that exist. Information about technological advances may be communicated to the eyes and ears of recipients ever so much more quickly through the technological improvements in publications, air mail, telegraph, telephone, radio, and television. But little progress has been made in the time required to convert that which meets the eye and the ear into decisions to act and to use what is known. For example, how many of the modern improvements in communications are being used to assemble and transmit agricultural marketing information more effectively?

Marketing Changes Incur Controversy

Beyond this, however, is the fact that market changes, no matter how much improvement they involve, incur controversy. Somebody always gets hurt in the sense that some market participants experience disadvantages. The disadvantages, moreover, usually strike a most tender spot -- the pocket-book. Unlike the competition in the agricultural production arena where it is man versus the elements, in marketing it is man versus man. Therefore, opposition to change must always be anticipated and the advocates of marketing change have to be prepared to encounter it no matter what the merits of the case may be in such generalized terms as social welfare, higher standards of living or greater efficiency.

All the participants in agricultural marketing do not share the same interests and, therefore, do not accept the same views with respect to what constitutes market improvement. Competition characterizes the market, and any change tends to be approached by the market participant from the standpoint of "how will it alter my competitive position?" From this point of view, individuals soon find that there are others who share their interests either pro or con for any proposed change. There is a natural tendency for those with similar views to band together for unified action so it becomes group versus group controversy. This is true even though a group may be comprised of buyers or sellers who are competitive in the most direct sense. Thus, we find farmers, or wholesalers, or retailers, or consumers who normally compete with each other joining together to advocate or oppose change. Likewise, groups that perform complementary functions recognize their competition for the consumer's dollar and engage in conflict when change is proposed. Thus, from time to time we find farmer groups pitted against consumers, commodity group versus commodity group, processors against distributors, and new industries against old industries. Group opposition to change constitutes a most imposing barrier to market improvement,

Institutional Barriers

Characteristically, these conflicting interests participating in a market are reconciled through agreement on the ground rules under which the competition will take place. These tend to become institutionalized in the form of legislation, regulations, controls, agreements and orders, many of which have the force of law and are policed. They tend to be fitted to the market arrangements, the technology and the compromises of the time of their introduction. Although they may be regarded as highly desirable stabilizing forces at the time of introduction, they frequently become extremely effective barriers to market improvement. Anybody who wants to change them is confronted with a formidable task. Mr. Wilcox has already alluded to some of these barriers as they pertain to transportation, packaging, and quality. I suggest that they extend to many other functions and to many other regulatory bodies besides the 48 states he mentioned.

A great share of the opportunity for market improvement, nevertheless, remains outside the pale of rigid market regulations and is largely in the scope of jurisdiction of another institutional arrangement, namely, company management. In commercial marketing this management, especially corporate management, holds an important position in deciding the market improvements that are to be made or even considered. Agricultural marketing research workers must recognize this because, unlike physical and biological scientists, they cannot conduct their investigations in isolated laboratories. They must conduct their studies in or with operating businesses such as processing plants, warehouses, or stores. To do this they must have the consent and active cooperation of management. Extension and service workers will also recognize that, even when possible market improvements are known, management must be induced to adopt them.

Management Barriers

Dealings with company management reveal some barriers that may be cited. Interest in progress tends to vary among managers inversely to the relative prosperity of their company or industry and directly with the degree of competition they face or the imminence of threats to their profit position. Good business conditions might be cited as barriers to improvement and adversity as a stimulant. This is true generally and in application to individual firms. The research man finds the prosperous business man less receptive to his ideas. He cannot argue with success. A businessman regards good profits as evidence of the rightness of his judgment and as evidence of a lack of need for change.

Agriculture is by nature a fluctuating industry subject to variable business conditions, climatic, and growing conditions. The individual industries within agriculture experience greater ups and downs than aggregate data reflect because they tend to be associated with crops that vary more in production, demand and prices than is true for agriculture as a whole. Accordingly, we find a wide range of attitudes within agriculture from one component industry to another and, from time to time, within a particular industry.

The cotton industry, for example, under the more direct threat of competition from synthetics, exhibits a much greater interest in research and progress than the food industries. The butter industry today seems to have an entirely different attitude toward research and progress than a few short years or months ago, and the butter industry now exhibits a keener interest than other segments of the dairy industry.

The greatest interest in change, in research, in improvement seems to be exhibited by new up-and-coming industries and by dying industries. Relatively few agricultural industries fall in these classes. They are illustrated by the live poultry industry on the declining side and the frozen food industry on the up side.

Another observation made among managers of some industries is their evident belief and desire to have others believe that their particular operations represent the acme of progress and their management the vanguard of leadership. These people tend to not only oppose research but to resent research that reveals improvements they have not thought of themselves. They do not seem to hold the respect for a coaching staff as most of athletic groups where the top professionals utilize nonplaying advice and help to the greatest extent. Incidentally, the relatively new activity known as operations research seems to be overcoming this barrier which I am glad to say is not prevalent among all our agricultural marketing industries.

Research and Service Barriers

Just as apparent as this type of barrier are the shortcomings of our agricultural marketing research or of the research and allied workers which also merit attention at this type of workshop. Among these must be listed a lack of new and productive ideas and a proclivity to work with fringe problems rather than to get to the heart of difficulties and propose useful solutions. It is relatively easy to maintain a rather detached position and place the finger of accusation on market elements that can be easily observed and recognized, or to make generalized criticisms. It is much more difficult to chart a course of progress or to make specific suggestions for improvement. This is especially true when the research worker must assume the obligation of proving or demonstrating in convincing fashion the benefits that would accrue from the adoption of his proposals. This difficulty leads him to resort to either perpetual criticism or descriptive research including mild suggestions of alternatives from what is found and described.

In the effort to overcome some of the difficulties of dealing with managers, many of our research and service workers prove to be poor psychologists or poor public relations men in eliciting management and market employee support. They frequently follow methods and approaches that tend to build up resistance instead of cooperation. In this area there are some valuable lessons to be learned from operations research.

Another distinct barrier is the unfamiliarity of our research workers with the tools of marketing research. As evidence of this, I cite the comments and suggestions presented for marketing workshops in response to an inquiry sent out during the past year. Almost without exception the respondents wanted the workshops devoted to research methods and techniques, emphasizing statistical training as that most needed. The clear-cut recognition of this limitation by the research workers themselves is the most favorable evidence that it may be corrected, but I fear that a workshop of this short duration will not suffice. More thorough training in several scientific disciplines is needed.

A closely allied shortcoming among agricultural marketing research and service workers is a lack of familiarity with some essential marketing functions on which many market improvements are dependent. I cite transportation as an example. Market organization, structure, and facilities which comprise the subject of this workshop are profoundly influenced by transportation developments. Yet, few of our people working in this area have more than a conversational knowledge of the subject or any comprehension of its theory, principles, and practice. We are almost devoid of men who have had practical experience or professional training covering any more than small segments of this very diverse and complex field. In our work we must train and employ research and service workers who acquire broader perspective of marketing as a whole. The persistence of requests for workshop groups to discuss specific commodity marketing problems does not appear to me to be in keeping with these needs.

Finally, I should like to cite as a barrier the institutionalism that is developing among our agricultural marketing workers. Groups associated with research agencies, scientific disciplines, geographic entities, and functional services have tended to become aligned together in a manner that hampers needed teamwork between them. One administrator participating in our marketing program recently pointed up the situation when he said there is hardly a day passes without someone complaining to him about others having ideas that they are supposed to have. They seek cease and desist orders to protect what they regard as their particular domain of agricultural research, service, or education. My experience substantiates this observation.

When this type of complaint is not honored, another type of problem ensues. It leads to duplication and overlapping. Each group wants its own laboratory or service facilities or professional specialists. Instead of working together as coordinated groups or teams and employing the principles of comparative advantage, the work is decimated so that the research, education and service is less efficient and more costly. Both difficulties could be resolved by breaking down the barriers between the groups.

This workshop, which brings together research, extension, and service workers from many different state and federal agencies from all parts of the country with varying experience and responsibilities, represents an effort to break down this type of barrier. We are aware that it goes in the opposite direction from the many suggestions received

that the sessions be devoted to more intensive consideration of specific research methods, marketing projects, or commodity problems. We are aware, too, that this many-sided approach of trying to cover simultaneously several aspects of a broad subject is much more difficult to organize. It may not be satisfying to those of you who look for something to sink your teeth into right away or, to quote still more critical statements received from past participants, who expect "something to take home to solve the problem on which you are now engaged" and to teach to your professional associates. It may, on the other hand, give you a better understanding of the men, the abilities, the resources, the activities going along with your own in the quest for agricultural market improvements. If it gives you any effective ideas on where you can draw upon the help of others, on how you can broaden your perspective, on how your work is viewed by others who are dependent upon it and thereby helps you to improve the utility of your own work, I shall regard the workshop as successful. For this workshop, at least, the aim of obtaining more coordination between your several activities is ranked as high as the objective of improving your proficiency as a specialist. These two goals, I submit, are not inconsistent. Specialization is inevitably accompanied by interdependence of individuals, agencies, and types of work. It must be accompanied by effective coordination of effort. We hope that some progress toward that end will result from this endeavor.

Please recognize that the workshop is not designed to equip you to do the other fellow's job. It is intended to help you help him by effective complementation of effort in seeking improved market organization and facilities.

Presentation at General Session
Saturday morning, August 8

RESEARCH, SERVICE, AND EXTENSION
PARTNERS IN THE SOLUTION OF MARKETING PROBLEMS

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Introduction

Attending this Workshop is like a homecoming to me for I am not only a native son of California, but also I am a graduate of the University of California to which I first came as a student a third of a century ago.

Also, I am honored to be asked to discuss this topic which I believe to be of fundamental importance. Marketing work must improve not only because marketing costs now take more than 50 cents of each consumer's dollar, but also because we seem to be entering another period of surpluses when more effective work will be expected of public servants engaged in marketing work. More teamwork among us and more coordination of effort are imperative.

Not A Research Workshop

This workshop is not a marketing research workshop but is one for research, service and extension. This becomes clear if we understand the sequence of events leading up to a decision for holding it.

Four national marketing research workshops have been held in the previous four years. Likewise in each of those four years, separate workshops, regional in scope, have been held for extension workers and for those engaged in service and regulatory work. These served to lift the horizons of those who attended and were good for all parties concerned.

Meanwhile, the marketing research workshop held a year ago at Texas A and M College was the last of a series of three. A resolutions committee recommended in effect that another series of three be held including one in the Far West and one in the Northeast, that a committee be set up to make tentative plans, and that "provision be made at each of these workshops for the exchange of information and ideas between: (a) research workers concerned with the solution of the problems . . . and (b) extension and service personnel . . . responsible for getting the results to the public and for the administration of such programs as would follow." 1/

1/ Pricing and Trade. Report of the 1952 National Marketing Research Workshop.
U. S. Department of Agriculture, p. 241.

Subsequently, a committee was set up to follow through on this recommendation. Approval was obtained from the organization and policy committees of both experiment stations and extension services as well as from commissioners and secretaries of agriculture.

Thus, a new series of three national marketing workshops has been launched. But they are not research workshops alone but workshops for research, service and extension personnel combined. Hence, it becomes highly important to achieve better teamwork between the three types of marketing personnel; also, two big words or expressions in the topic become highly pertinent: (1) partners in research, service, and extension and (2) solution of marketing problems. This paper will analyze these two points.

I. Partners in Research, Service, and Extension

If we are to be partners, we must have teamwork. Real teamwork is rooted in Christian principles. If we are asked to go one mile, go two. Let's really believe in and work together by the Golden Rule.

To work together better, we must get better acquainted; we must understand what the other fellow does. There must be mutual respect. The other fellow's job is important too. The older man must take the younger man under his wing. We must treat the other fellow as we want to be treated. We need an appropriate philosophy of working together.

Philosophy of Teamwork

A Philosophy of teamwork is largely a matter of attitudes, of what we really and honestly believe and practice. One way of discussing this is to draw lessons from the evolution of social and economical thinking about marketing and about trade.

Changing views about Trade

At least four influences in evolution of views about trade may be observed.

1. The Judea-Christian Influence -- It serves our purpose here to draw lessons from the teaching and experience of Christ. He came into a world which was imbued with selfishness and greed. To that world He taught many beautiful truths and was crucified. But it was not because of His beautiful truths that He was crucified but because He put his finger squarely on the way men did business with one another and denounced them. It was not because He said, "Behold the lilies of the field, how beautifully they bloom;" rather, it was because He dared to say, "See the thieves of the Temple, how they beat and steal."

For the old selfish philosophy of getting and grabbing, He substituted a new unselfish philosophy of giving and sharing. This is a philosophy by which we trade goods, or services, or ideas. It is a philosophy of trade between agriculture and the rest of the economy. It is a philosophy of trade among nations. It is a philosophy of trade between research, service, and extension people.

2. The Greek Influence -- The early Greeks, especially the Athenians, have made many contributions, especially in philosophy. The names of famous philosophers of Athens come to mind — Socrates, Plato, Aristotle. They, like the Christ, were great teachers of beautiful truths. They, too, put their finger on the way men did business with one another and denounced it.

The civilization of early Athens was based on a class or caste system. There were the elite or Oligarchy and the common people, the Plebians. Among the truths given them by their philosophers was a list of occupations considered honorable for citizens of Athens. Trading was not on that list. Slaves were imported to do the trading. Why? Trade was not considered as a two-way deal. The weaker party always got cheated in every act of trade. This was not honorable conduct for a citizen of Athens.

3. Influence of the Early Church -- The early church fathers shared those views. They were the great thinkers and teachers throughout the ages of church history. They, too, saw trade as a one-way deal. They would not give their blessing to trade as an honorable undertaking and sought ways of protecting the weaker party. One way was to endeavor to determine a "just" price so the weaker party would not get cheated.

4. Modern Views — Only in comparatively recent days has the view developed that trade can be a two-way deal with benefits accruing to both parties. There need be no weaker party if there is an appropriate philosophy of trading. Both or all parties can find mutual advantage.

This goes for relations between agriculture and the rest of the economy. It goes for relations between nations. It goes for relations between research, service, and extension people.

What comes out is illustrated beautifully in each home at Christmas time. Does each member set out to see how much he can grab off for himself, or does he deliberately set out to see how much he can share and, in the very act of sharing, gets more and contributes to something wonderful, world-wide?

Suppose in each wedding vow there would be included the language, "Before God and these people here assembled I hereby pledge to put more into this wedding than I expect to get out of it." How many happier homes would result.

In all human relations and especially in those between research, service, and extension workers an appropriate personal philosophy of teamwork and partnership is of the utmost importance.

Cooperative Functioning

Teamwork between research, service, and extension is akin to that which is needed among members of a true cooperative association. Some cooperatives become just another business firm largely because their members lose sight of the fact, or never had the view, that a true cooperative is a different way of functioning whereby the members do not delegate to others the making of every decision, but as in the old town meetings of New England they get together and share in making the decisions.

If this be true, in an effective teamwork of research, service and extension personnel, it follows that some method of getting together and making joint decisions is called for which will be discussed at a later point. That lies behind the decision to divide up this workshop into working subgroups. What will come out depends in large part upon the degree to which each member shares his ideas with others and joins in making decisions. In future marketing work, if there is to be real teamwork, may I appeal for an unselfish personal philosophy of cooperation, one of giving and sharing, of pooling of ideas and of making some joint decisions.

Leadership Needed

Some leadership must be thrown into the hopper to make cooperative functioning effective. By what philosophy that leadership is exercised, and how expertly it functions, the end product will be profoundly affected.

Whoever rises to effective leadership must perceive that there is an appropriate philosophy of leadership as well as one of cooperation. At least three types may be visualized.

The first is an autocratic or authoritarian type -- a "things are so because I say they are so" approach accompanied sometimes by a clenched fist pounding the desk behavior. This may not set so well in an enlightened age and among enlightened people.

A second type of leadership is democratic -- a "things are so because all agree they are so." By the first type you have a bird's-eye view of people looking down upon them as if they are incapable of making decisions. By the second type you have a worm's eye view of people looking up at them in their majesty each of whom has had experience unique unto himself which, if he is properly motivated, he may generously share in the common good. By the first type you believe in a rule of the chosen few, the elite, a sort of Hamiltonian view. By the second you have faith in the common man, a Jeffersonian view that, given facts and time, the common man is capable of democratic rule.

But a completely democratic approach is slow and awkward and cumbersome and may need expediting. So a third type of approach is a mid-point between the other two, a sort of interpretive type by which facts are supplied or drawn out of the group and interpreted to facilitate and expedite group decision. It is a participatory process in which the leader starts with the people as they are but with a view to what he wants them to become and, with much finesse, leads them in a self-education process.

Some type of smart leadership is called for in developing greater teamwork between research, service, and extension. Who supplies that leadership cannot be accurately blueprinted, but I believe there is an obligation for administrators to create situations where marketing personnel can develop a more effective teamwork and where strong and wise leadership can be selected or can rise to the occasion.

Coordination Needed

Progress has come in America by a discovery and introduction of new processes, a division of labor with specialization, an effective coordination of effort, lower costs, lower prices, and widespread distribution. An improved and well-integrated production and marketing have been involved in a teamwork of industrial effort.

In the agricultural marketing sector, an effective teamwork of personnel must not only involve a division of labor with specialization and increased individual productivity, but must also involve a greater and more effective coordination of effort and a more widespread distribution of output.

In a growing scheme of things, coordination of effort is imperative both internally within each shop and externally with other segments. Greater teamwork of effort within each of the three branches represented at this workshop and externally among them is a must if their combined productivity and distribution of output are to be improved.

Coordination is not easy to achieve. For years it has been sought in high places in the U. S. Department of Agriculture and other agencies of government. One way of achieving it is to have a proper administrative structure and point of view. Top administrators must agree that their respective personnel shall work together, and men at all levels of the echelon must agree too.

Some Unified Approach and Joint Action Needed

Marketing problems are larger than can be solved by one man working in isolation or in a vacuum. True, much basic research is done in this manner. But much applied research is needed, too, to help solve the pressing problems impinging upon marketing firms and industries.

In production fields farm families have problems larger than can be tackled by any one subject matter specialist. Ways are being found by which individual specialists no longer stand on prerogatives but share with others and are helping to solve common problems by working together in teams.

Some such joint efforts are being made by marketing men too, but greater joint efforts are needed. This calls not only for a proper spirit and willingness and philosophy of teamwork but some type of mechanism within the framework of which joint efforts leading to joint action can be made.

II. Solving Marketing Problems

Much success has been achieved in solving production problems in agriculture. There is a growing success in solving marketing problems too, but much more progress must be made.

To achieve that progress, a large problem-solving process is necessary in which many people share. Let us take a look at such a process for a moment, not through the eyes of a professional marketing person, but through the eyes of a member of the public.

Public Problem-Solving Process

Marketing is a part of a much larger process by which the public -- the people of this nation or any nation -- acquires its supply of food and fiber. The people of the nation are much interested in how their food supply gets produced, gets distributed, and gets consumed. They are also much interested in the people who do the producing, the consuming, and the distributing and how they get improved. A large continuing public process is involved in an effort to improve the process of acquiring the public's food supply and to improve those who take part in the process.

Many problems are involved in the solution of which an educational process takes place. The public has created many institutions to help in that process, with many persons taking part and with appropriate roles for each. Marketing is one such institution.

Marketing as a Part of an Educational Problem-Solving Process

In such a process at least three more or less well-defined stages may be visualized with appropriate roles for persons taking part at each stage.

First there is an exploratory or preparatory stage. Here, the problem gets recognized in its frame of reference, gets defined, and is studied from many points of view. Alternative lines of action are explored with implications of each. All of this is in preparation for a decision for appropriate action.

A decision is made in the second or enactment stage. Here, a choice is made from several possible approaches. How wise a decision gets made depends in part upon how many elements or variables in the picture get visualized in the preparatory stage of the process.

The third stage is one of execution. The line of action decided upon in the second stage now gets carried out by administrators whether public or private.

In such a process many persons take part with important roles for each. Public servants perform in the first stage of the process. The decision to be made in the second stage is for the firm, the larger group, or the public as the case may be. The administrator, public or private, functions in the third stage of execution.

Sometimes persons get mixed up as to their proper role. Sometimes this is in part due to their philosophy whether authoritarian, democratic, or interpretive as discussed in the first part of this paper. In part, it may be due to failure to understand the nature of their peculiar role or to accept their appropriate responsibility. Or it may be due to impatience at delay and a burning desire to get speedy action. Or it may be due to traditional ways of functioning.

For example, in production fields, where there is more exactness in research findings and in practices that follow, there has been a traditional tendency to make recommendations and to engage in much prescription type of spoon feeding. This is purely personal service work, but in the long run choices have to be made by the ones being served. This is especially true in marketing work where economic decisions must be made, and the level of economic understanding must be raised so wiser economic decisions can be made.

How are Decisions Made

If we are to have a society dominated by the elite, the decisions get made by the elite. But, if we are to have a society in which the common man makes the decisions, he needs to get built up so he is capable of making decisions. To this end we have developed a public school educational system. To this end we need a participatory process in marketing where the elite can help supply the facts but where the common man makes the decisions.

This process can work even better if there is some sharing in both the fact-finding and decision making, a joint effort at teamwork, a program of planning as well as solving endeavor.

Building a Marketing Program

Most marketing efforts are in the form of projects often small or piece-meal in nature with no interrelation between the projects or between those who take part. Oftentimes, the research man decides upon the project, makes the study, issues the report, and then forgets the whole matter.

But there can be a larger process than that which can be a true sharing in planning and in projecting the results. A few examples follow.

One day this spring, three men from Virginia came to my office for a conference with some of my associates including a marketing research man, an extension marketing specialist, and two men conducting marketing service programs. Soon we invited in a vegetable crop extension specialist from the Department of Horticulture. The three men from Virginia included an extension economist from V.P.I., the director of the State Bureau of Markets, and a research man from the Norfolk Experiment Station. They were members of an industry-wide sweet potato committee and were sent on a mission to obtain all the facts they could find bearing on sweet potato problems, both production and marketing from the University of Maryland and from the Beltsville Research Center, which is near by.

They were to report back to the larger committee which was engaged in studying Virginia's sweet potato problems with a view to determining a program of improvement including such program of action as was possible with the facts at hand together with a research study of aspects of their problem requiring further study.

On another day this spring, a group met in the county agent's office at Hagerstown, Maryland, in the heart of the fruit area of western Maryland in the Shenandoah-Appalachian fruit area of Pennsylvania, Maryland, West Virginia, and Virginia. The group included two research men from the Fruit and Vegetable Branch of PMA, three of my associates, and myself, including a marketing research man, an extension marketing specialist, and a marketing services man. With the county agent there were two representative fruit growers and the proprietor of a prepackaging firm. The problem being considered was how best to market the area's peach crop in tree-ripened form. A marketing program with both short-range and long-range aspects, including research, extension, and service work, was planned.

On another day last spring, a group met in conference in Baltimore. This group was concerned with marketing the state's wheat crop which gave every indication of selling at a 50 cents per bushel discount below the support price level. That group included three of my associates, a research man, an extension man, and a service program man, and myself. The county agent leader was there, with six county agents and with a dozen wheat growers. Several PMA committeemen, both state and county, attended. The President of the State Farm Bureau, the Master of the State Grange, several local grain dealers, and a few representatives of terminal elevators also attended. A program of immediate action and a long-range research program, since inaugurated as a three-year study, were agreed upon.

Many other examples could be cited from experiences in several states to illustrate the point that effective teamwork is proper and possible and, I believe, vital to the solution of marketing problems.

Of course, there are problems where independent research is involved. A certain amount of fundamental and basic research is necessary to push back the frontiers of knowledge. A certain amount of applied research is necessary too and some studies of short duration for special problems where data are vital for problems requiring immediate action.

Summary and Conclusions

Nothing new is suggested here except that an appeal is made for greater teamwork in the interest of solving marketing problems by joint action.

To effectuate such a more effective joint effort, a personal philosophy of unselfish working together in a common good is needed, a broad perspective is imperative, and some type of participatory educational process is a must. This is a process of both self-education and education of others, by more or less democratic means. Situations need to be created by wise leadership in which such a process can take definite shape and form. This process should be broadly participated in by both professional workers and

those whom they serve. All this needs to be built more firmly upon a base that now exists in part and needs to be directed toward main problems which are recognized and felt as impinging upon those whom public servants serve.

Such improvement can come about in part as a result of decisions and action by administrators, but much of it must be a result of dedicated effort by each person engaged in marketing research, service, and extension work.

Presentations at General Session
Monday morning, August 10

PROBLEMS AND PROGRESS IN THE IMPROVEMENT OF MARKETING FACILITIES

William C. Crow, Director
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Production and Marketing Administration

I. Introduction

- A. BAE figures show that it costs more to market most farm products than to grow them.
- B. Physical handling of the products accounts for most of the marketing bill
- C. The cost of physical handling depends upon
 - 1. The perishability and bulk of the product
 - 2. The number of times it is handled
 - 3. The efficiency of the facilities through which it moves
 - 4. The efficiency of the equipment and methods used to move the product into, within, and out of the marketing facilities through which it passes

II. Kinds of marketing facilities

- A. Shipping point markets, such as
 - 1. Livestock auctions
 - 2. Farmers fruit and vegetable markets
 - 3. Packing sheds
 - 4. Country elevators
 - 5. Milk plants
- B. Processing facilities, such as
 - 1. Creameries
 - 2. Canneries
 - 3. Cotton gins
 - 4. Slaughter houses
- C. Transportation facilities
 - 1. Rail
 - 2. Truck
 - 3. Boat
 - 4. Air

D. Warehouse facilities

1. Cotton warehouses
2. Tobacco warehouses
3. Grain storages
4. Other specialized commodity storages
5. Refrigerated warehouses
6. Merchandise warehouses

E. Terminal market facilities

1. To supply retail outlets (wholesale produce markets).
2. To supply processors (stockyards)

F. Retail facilities, such as

1. Retail stores
2. Farmers retail markets
3. House-to-house selling

III. Workshop plan

A. In this workshop there is a group studying each of these major kinds of facilities

B. To improve these facilities it is necessary to know

1. What is wrong with them
2. What constitutes an efficient facility
3. How to choose the proper location for a facility
4. The most economical size
5. The best design
6. The kind of handling equipment and methods best suited to the facility
7. How to operate the facility

C. Marketing facility improvement may be accomplished by

1. Remodeling old facilities
2. Building new ones
3. Eliminating inefficient facilities

D. To get the job done requires

1. Research to find out how
2. Service to show market operators how to apply the research results to their specific situations
3. Education to inform producers, marketing agencies, and consumers of the best methods

IV. Shipping point and processing facilities

A. What is wrong with them

1. Often too many of them for most efficient operation
2. In many cases they are not designed for low-cost handling
3. Many do not have the right kind of handling equipment
4. In some areas where production is expanding additional facilities are needed.
 - a. Cotton in the Far West
 - b. Livestock and grain in the South

B. Shipping point market and processing facilities in many respects are the easiest kinds of facilities to work with

1. They are relatively small
2. They are close to the farm and most of us are more familiar with that end of the marketing channel
3. Not so many conflicts of interest are involved
4. They can usually be dealt with on a commodity basis

V. Transportation facilities

A. Need to speed up movement of products by rail

1. Move fast enough while moving, but
2. They are moving less than 1/4 of the time, which
 - a. Delays delivery
 - b. Accentuates car shortages
 - c. Wastes investment in equipment

B. Need to avoid trucking at each end of rail haul

C. Need better transportation equipment

1. Improving refrigerator cars

- a. For frozen foods
- b. Split absorption cars
- c. Mechanical cars
- d. Dry ice cars
- e. To supply heat or cold

2. Improving refrigerated trucks

- a. Many trucks performing unsatisfactorily
- b. Many tests made
- c. Some improvements developed

- (1) Return air ducts
- (2) Better arrangement of mechanical units and truck construction
- (3) Dry ice bunkers

- 3. Better equipment for livestock
- 4. Better equipment for grain

D. Improved loading and bracing

- 1. New lettuce crate
- 2. On-end loading of cantaloups
- 3. Cross-wise loading of watermelons

VII. Warehouse facilities

A. Trend toward one-story warehouses

B. Studies are being made of

- 1. Refrigerated warehouses
- 2. Grain elevators
- 3. Cotton warehouses
- 4. Apple warehouses
- 5. Handling equipment in warehouses

VIII. Terminal market facilities

A. Importance of terminal markets

- 1. Most farm products move through them (fruits, vegetables, poultry, eggs, meat, butter, cheese, frozen foods, etc.)
- 2. Nearly all large cities receive supplies from at least 40 States
- 3. In terminal markets prices are established

B. What is wrong with the handling of perishables in these markets

- 1. Five Federal investigations (1917, 1921, 1936, 1945, 1950)
- 2. No rail connections
- 3. Narrow streets - traffic congestion
- 4. Poor facilities
 - a. Stores too small
 - b. Produce on sidewalks and gutters
 - c. Narrow entrances
 - d. Lack of refrigeration
 - e. So designed that efficient handling equipment cannot be used
- 5. No space to expand

6. Divided markets

- a. Cross-hauling
- b. Wasted investment and labor

C. New York City as an example

- 1. Arrivals all over city by rail and boat
- 2. Point out number of different markets
- 3. Lower Manhattan main market
- 4. Products are handled poorly
- 5. Describe Washington Street market area
 - a. Stores
 - b. Commodities
 - c. Street 30 feet wide
 - d. Traffic ~ 1,300 trucks, 400 spaces

6. Distribution from lower Manhattan

7. Main things wrong with New York City market

- a. Scattered deliveries and cartage
- b. Traffic congestion
- c. Inadequate buildings - size, no rear entrances, no handling equipment
- d. Lack of storage space
- e. Excessive handling
- f. Price-making difficulties
- g. Lack of proper regulations - hours, wasteful practices

D. Philadelphia - another example

- 1. Map
- 2. Dock Street 1880 and now
- 3. Produce Terminal

E. Boston situation

- 1. About 95,000 carlots handled - over 1/2 billion dollars
- 2. Map of Boston
- 3. Faneuil Hall Market

F. Kind of market facilities needed in large cities

- 1. Place that handles a complete line
- 2. Open to all methods of transportation
- 3. Rail spurs to buildings
- 4. Efficient size and design of buildings
- 5. Wide streets

6. Parking areas
7. Low cost land
8. Centrally located for buyers
9. Managed in public interest
10. Only reason to get a new facility is to cut cost or expand volume

VIII. Retail facilities

- A. Retailing is important because
 1. It takes 1/3 of marketing cost
 2. It is in the retail store that consumer decides whether to take or leave a product
- B. Great improvement has been made in retailing with the advent of the supermarket
- C. Much still can be done to improve handling in retail stores
 1. In the better stores, and
 2. To bring average retailer up to the best
- D. To do anything of consequence to improve efficiency of retailing we must see the point of view of the retailer who is not interested in single commodities but in store operation
- E. Some studies of retailing have been made under the Agricultural Marketing Act, but some people question the propriety of working in this field
- F. These studies have brought
 1. Improved check-out counter
 2. Improved methods of handling groceries
 3. Improved methods and layout for handling meat
 4. Improved utilization of shelf space
- G. Service work with retailers has brought improvements in merchandising
 1. Fruits and vegetables
 2. Poultry and eggs

IX. Improving methods and equipment for handling into, within, and out of facilities

- A. Labor costs are over half the marketing bill - too much handling of packages one at a time too many times

- B. The facility and handling methods and equipment must be designed to fit together
- C. A very small start has been made in applying labor-saving devices to the marketing of farm and food products
- D. The work that has been done shows that it is possible to
 - 1. Cut costs
 - 2. Do the job with less labor
 - 3. Reduce damage to products
- X. Improved facilities and handling methods not only reduce costs but also help maintain quality, for example.
 - A. Better refrigerator cars and trucks give better protection to product
 - B. Elimination of cartage between railroad tracks and buildings not only reduces cost but avoids damage to product
 - C. Proper refrigeration in buildings maintains quality
 - D. Handling unit loads of packages reduces damage
 - E. Speedy and direct movement helps to get products to consumer in good condition
- XI. Some examples of progress made in improving facilities and equipment
 - A. Portable mechanical lift reduced labor in high-piling apples 70 percent, and in breaking out by 80 percent
 - B. Use of temporary block with industrial truck reduced by 62-1/2 percent labor required to feed the "dinky press" with cotton
 - C. A cotton warehouseman in Texas by putting wheels on his beam scale eliminated 16 hand truckers
 - D. One method of loading out delivery trucks of produce wholesalers costs \$1.43 per ton while another costs \$2.27
 - E. An improved grading table reduced the labor required for sorting lemons by 75 percent and oranges by 66 percent
 - F. By building a new warehouse and getting the right kind of equipment a warehouseman reduced his handling costs by more than 80 percent
 - G. An improved check-out counter increased the productivity of the checker by 38 percent

- H. Improved methods of receiving, checking in, price-marking and stocking groceries increased the productivity of labor by more than 66 percent
- I. An improved refrigerated truck has moved frozen food from California to Massachusetts with the temperature at arrival $13\frac{1}{2}^{\circ}$ below zero
- J. Hundreds of mechanical refrigerator cars are in use
- K. Better loading and stowing have cut damage to some products by 2/3
- L. A new market in Boston will cut handling costs by \$4,000,000 per year. First section being built
- M. New markets have been built or are under construction in the following cities
 - 1. Atlanta
 - 2. Augusta
 - 3. Savannah
 - 4. Miami
 - 5. Columbia
 - 6. Greenville, S. C.
 - 7. Jackson, Miss.
 - 8. Nashville
 - 9. Louisville
 - 10. Indianapolis
 - 11. St. Louis
 - 12. Rochester
 - 13. Toronto
 - 14. Hartford
 - 15. Boston
 - 16. Trenton
 - 17. San Antonio
 - 18. Dallas
 - 19. Houston
 - 20. Kansas City
 - 21. San Juan
 - 22. Denver
- N. Assembly market facilities being built in many places
 - 1. New livestock auctions
 - 2. New grain elevators
 - 3. New egg assembly plants
 - 4. New fruit and vegetable markets
- O. Improved warehouses being built
- P. Packing houses being improved
- Q. More efficient retail stores being constructed

XII. Problems in improving marketing facilities

- A. Inertia - natural resistance to change

B. Collective action required - often involving many groups, such as

1. Wholesalers
2. Jobbers
3. Railroads
4. Landlords
5. Labor unions
6. City or State officials
7. Financial institutions

C. Lack of leadership

D. Lack of knowledge of what to do. Improving marketing facilities draws on knowledge of many subjects, including

1. Marketing all commodities
2. Engineering
3. Transportation
4. Commodity behavior
5. Finance
6. Accounting
7. Law
8. Public relations

E. Few places where people can learn how to plan marketing facilities

F. Trade people often feel that agricultural workers have wrong viewpoint and are impractical

G. Investment

1. Money invested in old facilities
2. Money required for new

H. Active opposition sometime from

1. Landlords
2. Labor
3. Dealers who currently enjoy a competitive advantage

XIII. Conclusion

- A. The only way to hold down the cost of marketing is to find the specific places where something can be done and do it
- B. In pointing out some of the progress that has been made in improving marketing facilities and the problems that must be solved in making further improvement, I hope that I have

1. Shown that something can be done to improve this aspect of marketing
2. That the results to be obtained are worth the effort of people interested in marketing research, service, and education, and that
3. I have helped open up the subjects that will be studied by several Work Groups.

Presentations at General Session
Tuesday morning, August 11

INTERACTIONS BETWEEN TECHNOLOGY AND THE FOOD MARKETING PROCESS

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I come to this morning's program with a deep sense of my inadequacy to deal with so broad a subject as the one announced. My training and experience have equipped me to talk about chemistry, engineering, and food technology with some confidence, but -- as the saying goes -- I have never met a payroll. I have never sold a carload of potatoes, contracted with growers for a season's run of canning peaches, or bargained with produce wholesalers for the day's supply of green vegetables.

My audience, I would suppose, is mostly made up of people who are professionally familiar with the complexities of the marketing system. My only chance to say some things that will be true without being trite is to concentrate my remarks on the "technology" part of the title and point out some ways in which modern technology impinges on your business of agricultural economics and marketing.

For the purpose of this talk I shall define a "technology" as the art and practice which are embodied in the operations of an industry. It comprises the whole body of past invention, skill born of experience, knowledge of the right expedient to solve an operating difficulty, and an uneasy and shifting blend of traditional know-how with new and different operations -- as new as last week's scientific discoveries or yesterday's vigorous beef from the Sales Manager.

There are as many different technologies as there are different industries -- and that means a great many. The Census of Manufacturers recognize some 500 different industries in our American scene. If we think only of those which are significantly and rather closely related to food marketing, we still have a large number. Forty-two food processing industries are given separate status. Then there are the equipment industry, the container industry, the warehouse industry, and the transportation industry, to name only the larger industrial units involved in the marketing chain. All this constitutes so large and so variegated a segment of our economy that only the broadest of generalizations about it will be valid.

I shall be speaking about changes in technology, some of the forces responsible for those changes, and some of the effects of technological change. Now it is true that the phenomenon of change is not peculiar to our own times; nevertheless, it comes close to having the dimensions of a new problem, just because its tempo is accelerating so rapidly.

As an engineer would say, accommodation of any structure to an applied stress takes time; if stresses are built up more rapidly than the accommodation or relaxation can take place, the structure behaves like a brittle body, not like a tough one. Perhaps one important concern of the social scientist should be the recognition of spots in our economy where a lubricant should be applied, or the inertia of certain parts be reduced and a little more flexibility built in.

Technology is not a new thing in the world, any more than the fact of change. Primitive man developed some very successful technologies and their matching industries. The medieval guilds possessed technologies which command our admiration; some of them, in fact, persist without much change into our own day. The art and practice of these industries are embodied in a tradition, mostly handed down from master to apprentice by means of example and word of mouth. Vital elements in the tradition are kept as closely guarded mysteries. The technologies of some of our present day food industries contain their fair share of this traditional element.

As the physical sciences came to be applied deliberately to the practices of industry, traditional mysteries frequently found themselves suddenly unveiled and deprived of their appeal -- or at least put on the defensive. For the past 50 years or so, in fact, they have been especially vulnerable. People have been skeptical of traditional authority, inclined to identify "change" with "progress," and apt to find a special virtue in rapid obsolescence. Scientific methods, on the other hand, have acquired an almost mystical aura of invincibility. It is indeed a brave advertiser nowadays who will boast that his product is being made exactly like it was 50 years ago.

There can be no doubt that the startling, the revolutionary changes are mostly the result of interactions between science and technology. I need not elaborate with examples; every newspaper reader is aware of the connection.

But let us not make the mistake of equating "new" with "scientific." I think that, on the contrary, most of the changes experienced in our American technologies have a less glamorous origin -- in common sense, let us say, applied to the solution of an immediate production problem; or in a kind of desperate inventiveness born under the stress of tough competition; or even in an uncritical willingness to try any new thing that might have advertising appeal. In a climate of public thinking which finds only this year's model attractive, there are few deterrents to rapid change.

One of the consequences of this situation is that technology and the marketing process interact on one another. We must not think that marketing is the passive recipient of blows arising from changes in technology, for as often as not it is a technology which must make adjustments forced by a marketing situation. The web of cause and effect is sometimes so tangled that all we can say is that technology and marketing are indissoluble parts of a single complex organism.

We have sometimes tried to project trends in technology, in order to foresee where some of the major areas of stress and change will be in the future. This is a very frustrating kind of undertaking. By and large, science fiction authors can do it better than professional scientists. But even the fictioneers (as we can see well enough in retrospect) frequently miss the big ground-swells of change, and have made their most absurd mispredictions when they were being most sensible and logical. The brotherhood of scientific chart-extrapolators can show no better record of successes -- and I say that, even though I myself am a notorious extrapolator of charts.

Shall we be safe even if we do no more than predict an accelerating tempo of change? Not completely safe, perhaps, because we do not know surely that World War III will not begin tomorrow. If such a thing as that were to happen, we would not need to worry about new technologies in food marketing for a long time -- perhaps not within our lifetimes. But, of all the possible predictions about technology, that is perhaps the most certain. If we compare the food marketing system of today with that of only 25 years ago, we see well enough that a most impressive change has taken place. And yet, as a scientist and technologist, I must tell you that the bases for even more revolutionary change are even now written in the technical journals or in laboratory notebooks, I do not believe anything short of global war can stop the development. A deep depression might even stimulate it, we cannot forget that the frozen food industry got its real start during the 30's.

This matter of scientific prediction has some bearing on a moral question which troubles many people. Every new thing which is loosed upon the world contains potentialities both of good and of evil. When we say that a new technology causes "severe dislocations" we are using a euphemism. What we mean is that somebody is getting hurt. Now the question is, should a man whose business it is to discover new things feel a responsibility for the consequences of the new knowledge? Should he withhold it, bury it, if he feels the consequences will be evil? I think most scientists have undergone a season of soul-searching since 1945 -- and I believe most of them have reached the realistic conclusion that consequences are impossible to foresee. No man has the right to assume the prerogative of deciding how much knowledge is good for mankind. Knowledge is a better guide to human action than ignorance. Nevertheless, I can imagine a future in which the "dislocations" have become so burdensome that public opinion, in revulsion, will put stability and security ahead of progress, outlaw scientific research, and acclaim ignorance as a virtue. There will may be real need for those lubricants and flexible elements in our economy I mentioned a few moments ago.

The industries which deal with agricultural commodities are no different from any other industries in the general characteristics we have been discussing. In particular, the forces leading to technological change are as potent in these industries as anywhere. Their consequences come in for an unusual degree of public attention, because of the national interest in maintaining a sound farm economy. For example, consequences of the development of a single new product, oleomargarine, illustrate

both the magnitude of some of the readjustment problems we face and the extent to which the public may become concerned.

Technological developments in the food industries are, in large part, responsible for a major shift in the dietary habits of the American people. According to dietitians, the change has been generally for the better. Fifty years ago the pantry shelf and the family ice-box carried only a rather narrow assortment of staple products -- flour, corn meal, lard, sugar or molasses, rice, cheese, dry beans, prunes, raisins, and milk; butter and eggs produced not more than 10 or 15 miles away. Down cellar there might be potatoes, cabbage, turnips, and apples until sometime in the spring. The chicken for the Sunday dinner was beheaded on the chopping block in the back yard. The round steak or pot roast or pork chops for the weekday supper was carved by the butcher that day from the carcass of an animal that had walked into the local slaughterhouse a day or two previously. Green vegetables and tomatoes during the summer, peaches and strawberries for a few weeks, a few oranges at Christmas time -- that was just about the fare for millions of Midwestern and Eastern families around the turn of the century.

In contrast to that picture, we now have national distribution of all important food products. Even highly perishable produce is delivered 3000 miles away in substantially fresh condition. Crops which reach harvest maturity during only a few summer weeks are sold throughout the year in every town in the Nation -- not as out-of-season luxuries, but as everyday staples. Farmer, processor, and distributor have combined to make brand names signify dependable uniformity in quality; more than that, between them they have contrived to take over one after another of the more laborious kitchen tasks. More and more food products are now purchased ready to serve, or requiring merely a brief cooking or warming up. The pantry, the refrigerator, and the deep-freeze unit may contain hundreds of distinctive -- and distinctively packaged -- foods. The consumer now purchases, along with the food, a wide variety of services. The average American's diet is more varied, and better balanced nutritionally, than at any time in the past.

There are those who denounce these transformations of the food marketing process as downright harmful; who say that all of this processing and storing and handling destroys the nutritive quality of our natural foods. The charge has not been ignored, either by government agencies or by the great food processing and distributing companies. Many thorough studies have been made and published. I believe I summarize the findings accurately when I say that the charge has been shown to be untrue. In fact, it is safe to say that at any time of year, at any market in the United States, you can buy, for example, green peas that are better in every respect, including nutritionally, than could have been bought in the pod from a huckster's wagon in Chicago or Washington on a summer day in 1900.

Public awareness of the facts of good nutrition is one of the social forces that has had a decided impact on technology. High vitamin potency in a product makes good advertising copy nowadays. Competition on that basis has a whole train of technological consequences, all of them involving the assimilation of new scientific and engineering knowledge into the art and practice of the industry.

Other competitive forces likewise have stimulated intense research and have led to one innovation after another in every phase of the marketing process. Shippers of fresh fruit and vegetables, upon losing markets to excellent new processed forms, devise ways to meet that competition by introducing more attractive varieties, improving the maintenance of fresh quality, and reducing the costs of handling and transporting the produce. Growers and shippers of wheat and potatoes, recognizing the gradual shift of consumption away from these staples toward other food products, try to arrest the trend by devising new processed forms that are more attractive or more convenient. Growers and processors who are distant from a consuming market look for ways to concentrate or dehydrate their product, so as to save the needless expense of packaging, storing, and shipping large quantities of water. Processing plants faced by price competition make heroic efforts to streamline the handling of raw materials, reduce losses and waste, introduce automatic or continuous equipment in order to reduce labor costs, and extend the operating season of the plant so as to cut overhead charges. A food processing organization today does, as I said previously, maintain certain elements of the traditional in its technology, but these elements are being squeezed into smaller and smaller proportions by the competitive pressure to change and improve the technology.

Now I want to use a few minutes for discussion of the role played by scientific research in the operation of this kaleidoscope. That it does play a big role is beyond question, and the reason why it does is simple: Research turns up new knowledge -- and knowledge is power. The men responsible for operation of our industries are aware of that resource and make use of it. Many of the larger processing firms, equipment concerns, and package manufacturers maintain their own strong research staffs. Transportation interests, the warehousing industry, and several of the distributing chains conduct or sponsor research. A number of trade associations now set aside funds to be used for sponsored research. Research designed specifically to further the farmers' interests is carried on almost entirely by the States and the Federal Government, because in general the farm population is too scattered geographically and too diversified in interests to organize a research program directly.

At this point let me remark that while public agencies spend a considerable amount of money on agricultural research, the sum is very small both in comparison with the amount of public funds used for research in other segments of our economy and in proportion to the value of agricultural products. In March Dr. Byron Shaw, Agricultural Research Administrator, gave an Appropriations Subcommittee some rather startling facts. In 1951 the Federal Government spent about \$56 million on agricultural research, the States slightly more -- a total of \$113 million. This was less than 3 tenths of 1 percent of the total cash receipts from farming that year. Industry had spent a little more than this on certain lines of agricultural research and to develop and apply the results obtained in Federal and State laboratories. In glaring contrast to this picture, the aircraft industry spent 13 percent of its sales income for research, the

electrical machinery industry 6 percent, the chemical industry $2\frac{1}{2}$ percent -- and the Federal Government furnished about half of the funds used for research by all industry. Federal appropriations for agricultural research made up less than one-fortieth of total Federal expenditures on research. In the light of these facts there is no shadow of justification for the complaint sometimes heard that Congress and the State Legislatures have been unfairly giving farmers a technologic advantage over other segments of the economy through this research support.

Much of the publicly supported agricultural research is of the kind we are accustomed to designate as "production research" -- that is, research designed to develop better plants and animals, learn how to control diseases and pests, work out improved farm equipment and better farm practices, and the like. A kind of research we call "utilization research" impinges more directly on the various technologies involved in food marketing. We think of it as taking three major directions:

- (a) The conversion to stable form of the produce of our lands during the seasons when it is in greatest abundance, in order to make it available for later use;
- (b) Reduction of the cost of processing agricultural commodities so that loss, wastage, and the price spread between producer and consumer are reduced to a minimum; and
- (c) Development of new and more valuable materials from products not now finding their most advantageous market.

You can see at once that new knowledge in any of these directions can lead to far-reaching transformations in food processing and distribution. Think what the single development of frozen orange juice concentrate has already meant to the citrus industry; more than half of the total production of oranges is now marketed in processed form. No longer are oranges an exotic surprise to be stuffed into the toe of the Christmas stocking; for many millions of American families orange juice is as much a part of the normal breakfast as coffee.

I am especially delighted that the plan for this workshop includes a brief visit this afternoon to the Western Regional Research Laboratory, operated by the Bureau of Agricultural and Industrial Chemistry in the city of Albany, only about 3 miles from this campus. Some of the things I have been saying to you will be far more vivid when you see for yourselves some aspects of utilization research at the Regional Laboratory.

You remember that I have said research is the quest for new knowledge. At the Laboratory this afternoon we expect to show you several different kinds of investigation. You can think of each of them as being the germ, the embryo, of future technological developments. What those developments will eventually be, how important or far-reaching their consequences, we shall certainly not venture to predict. In fact, it may well turn out 5, 10, or 20 years from now that we failed to recognize and show you the most significant line of research now going on in

the Laboratory. You will perhaps be inclined to attach the most importance to some of our developments in applied research, where we can show you samples of new products which are already being actively taken up by industry. We like them too. We think they are good solid accomplishments, creators of new wealth that will repay the cost of the research many times over.

The really unpredictable work lies in the field of basic research -- that is, the kind of investigation which sets out to discover just why natural phenomena behave the way they do, and exactly what occurs. Most of our applied research is built on knowledge obtained that way. Out of it may come great and sweeping discoveries that will have tremendous impact on our economy. Or perhaps nothing discernible will come of it during our lifetimes. Projects of the basic variety are distinguished primarily by the research man's attitude toward the problem, his frame of mind. Above all, he is curious. His objective is new knowledge, and he plans his experiments so as to ask the right questions of Nature and get unambiguous answers. His is not an idle curiosity. Even though the approach is basic, each of these projects is a research for solution of problems encountered by producers or processors of an agricultural commodity. In some cases we have already demonstrated that this "hard way" is really the only practical way to approach a tough problem.

I offer no apology for this considerable discussion of research. No consideration of currents of technological change would be realistic without some appraisal of the role of research. I return now to the main stream of my subject.

This whole matter of the interrelations between technology and food marketing was given rather thorough study a few years ago, as many of you know, by an inter-Bureau committee headed by Dr. F. F. Elliott, Associate Chief of the Bureau of Agricultural Economics. Our group played some part in the study. It eventuated in a 115-page bulletin, Agricultural Monograph No. 14, published in October 1952 under the title, "Technology in Food Marketing." Manifestly I cannot even abstract or summarize such a report in a few minutes. Nevertheless, some of the general conclusions are well worth repeating. They might be paraphrased as follows:

- (1) Technology already has brought about a revolution in the marketing of food, and the forward drive is continuing.
 - (a) Partly or wholly through the impetus of technology, the volume of processed foods increased greatly during the period 1930-1950.
 - (b) A whole new industry — the freezing of foods for mass consumption — was created.
 - (c) New efficiencies were introduced into practically all phases of processing and distribution.

- (d) Marketing services became more numerous, and often more elaborate.
- (e) The various operations that together make up the marketing system tended toward larger scale and closer integration.

(2) These changes have affected everyone, usually for the better.

- (a) The farmer's markets have been broadened.
- (b) The food supply available to the average family has been improved.

(3) But technology has created new problems as it solved old ones.

- (a) Important developments are accompanied by widespread dislocations as one product or method displaces another.

(4) Although the net effects of the forward drive of technology have been favorable, there is no warrant for assuming that every future development will automatically work out for the best.

- (a) The problems created by technology must be recognized and met with intelligence and vigor, or minor dislocations may grow into serious situations.
- (b) Recognition and understanding of problems accompanying technological change are handicapped by lack of thorough case studies which will trace causes and effects through all their complexities, and evaluate the effects realistically.

Summing up this whole discussion, then, we may conclude that the forces behind technologic change are so strong that even the rate of change is likely to increase. The food industries do not yet approach the rate of obsolescence in processes and equipment now characteristic of the chemical, communications, or automotive industries. It is hard enough to assess trends even in the kind of change resulting from common-sense improvements made to meet competitive situations; predicting the effects of basic scientific discoveries is quite impossible. Each of these changes is likely to produce a mixture of benefits and casualties. Deliberate thought and action may succeed in maximizing the one and minimizing the other. The task of seeing to it that the forces of technology attain their greatest possible effectiveness requires the ingenuity, the judgment, and the cooperativeness of all concerned -- that is, of the farmers, the consumers, and the whole array of industries engaged in food processing and distribution.

THE IMPACT OF MECHANIZATION OF MARKETING AND PRODUCTION OF AGRICULTURAL PRODUCTS

Abstract of Statement by
C. Guinn Barr, Senior Biologist
Food Machinery & Chemical Corporation
San Jose, California

It is difficult to separate the subject of marketing from that of production. Marketing problems are a part or a result of the production picture. There is a tremendous need for increased crop production to meet the demands of a rapidly growing population.

Through intensified agriculture, foodstuffs are produced great distances from the point of consumption, posing problems in transportation and marketing. Production and marketing, therefore, are closely interrelated.

Improvements in yield per acre coupled with increased mechanization have raised the man-hour output 160 percent of the 1935-1939 average while the man-hours worked have decreased to 85 percent of the average for that period.

American farmers today have low labor costs because they own and operate a bigger power plant than any other group of producers, 178 million horsepower — twice that of 1940.

Many labor-saving machines used for both production and marketing are listed and described. Important equipment mentioned include:

- (a) Sweet corn harvesters, huskers, and cutters
- (b) Hydro coolers
- (c) Juice concentrators and freezers
- (d) Egg sizers and tabulators

Slides are used to illustrate the impact of machine development on production and labor requirements. Trends in the American public's eating habits are shown. Some statistics are presented to indicate the consumption needs to meet the demands of the country's predicted future population.

Processes employed in the harvesting, handling, and packing of sweet corn have made possible a product of improved quality resulting in greater customer demand.

Technical and mechanical developments leading to the use of better methods in the preparation and distribution of concentrated frozen orange juice are discussed.

Presentations at General Session
Wednesday morning, August 12.

RESEARCH IN MARKET ORGANIZATION AND FACILITIES:
APPRAISAL OF CURRENT WORK AND FUTURE NEEDS

Robert M. Walsh, Deputy Assistant Administrator
Agricultural Research Administration

I

First I should like to talk briefly on some points that have been discussed in previous speeches.

Mr. Wilcox in his presentation indicated a preference for national regulations rather than variable state requirements with regard to such things as labeling of products, methods of packing, weights of shipment, and so on. There is a certain amount of literature on this subject. A recent example is the publication of the National Research Foundation on Sanitary Requirements for Milk and Dairy Products. This type of publication presents much useful information. We need many more of the same high caliber, not only in the field of dairy products, but in other commodity fields where state and local regulations are proving burdensome to the free market flow of products.

I say this not to make the point that national regulation should replace state and local regulations in the marketing of agricultural products. The point is, rather, that research, with a follow-through on the part of State Service and Extension workers, should throw a great deal more light than is now available on the burdensome and often inequitable nature of some of the barriers imposed on the movement of farm products. Very likely the over-all marketing situation could be improved by the adoption of uniform state and local requirements in some cases; and by elimination of restrictions in other cases. But this can be demonstrated only by comprehensive and intelligent studies, with the facts and conclusions carefully and clearly told to the public.

II

Another point touched on by both Mr. Wilcox and Dr. Trelogan had to do with methods of selling farm products. Mr. Wilcox mentioned the problem as to whether pricing should be on an f.o.b. or delivered basis, and also the serious question as to whether auction markets function as well as they might in sales of fresh produce. Dr. Trelogan cited the example of the Dutch auction system, and indicated that some of the premises followed by the Dutch were at variance with our own. Now I have heard that the Dutch auction system is quite successful, and not necessarily because the Dutch start with high offering prices and work down the scale to the first bidder. I suspect that the success of the Dutch auction

system lies primarily in the organization and management of the auction market itself. Here is a point of departure whereby we may take a fresh look at our own auction markets. The extent of cooperation among farmers participating in auction markets may be higher in Holland than we can expect to achieve here. But the Dutch example should perhaps inspire comparative studies of methods and efficiencies of conducting auction markets within the United States, drawing to a certain extent on foreign experience.

I do not pretend to have the answer as to whether pricing on an f.o.b. or delivered basis offers the better method. I know that within the past few years sellers of inedible tallow and greases, the renderers, were compelled by the principal buyers of their products, the soapmakers, to shift from an f.o.b. to a delivered basis. The renderers were quite unhappy about this situation. But now they appear to be reconciled to it. Possibly it doesn't make too much difference whether pricing is on an f.o.b. or a delivered basis, so long as the practice followed is uniform for a given commodity or group of commodities, and if we assume also that every shipping point is in effect a basing point.

The subject of prices and pricing is broader than indicated by the topics just discussed.

Free-market prices, which economists talk about so much, in many cases seem to lie in the age of mythology. Don't we need to take a close look at some of our "administered" prices to determine whether or not they offer a better method of pricing than might prevail in a less highly regulated agricultural economy? I am referring not only to the rigidities imposed by direct price supports provided by the Federal Government, but also to the Order Markets where prices are set by local boards from month to month or even week to week. Even if we conclude that such methods of pricing are unavoidable, it doesn't follow that the methods used are the best that can be devised. Much effort has gone into this field of study, but the problems involved are so big and important that the research effort should be expanded and not relaxed.

Some study is being made also of methods of pricing and payment to growers where crops are produced and sold on a contract basis. The object of such research, of course, is to develop better contractual terms if possible.

Additional research in the field of prices and pricing could well be made with regard to the role of central markets in price discovery. The trend in selling through central markets appears to be sloping downward. Some of the large chain stores have shown a tendency to decentralize their buying operations. There is also the problem engendered by in-and-out buying, with "buyers on the sidelines" on some days. All this intensifies the difficulties of using central market quotations as a basis of buying and selling in outlying markets. In some cases, also, there is no central market for the product—tallow and greases, for

example, and locally-produced eggs in New England. How reliable are the trade news reports and the Federal-State market news reporting? Are such reports adequate to provide a basis of trading, particularly when they show a wide range of price quotations?

I could perhaps go on and indicate more problem areas for research in the field of pricing, such as the problem of pricing dairy products on the basis of butterfat or on some alternative basis. But I am sure most of you are familiar with additional problems, and I will get on to other fields.

III

One of the early important studies in the field of market organization and structure was A. C. Hoffman's publication in the 1930's on Large-Scale Organization in the Food Industries. As the scope of food processing has increased, the size of firms has grown, and food processing and distributing today is "big business." Bill Nichols has given us a recent example of this in his publication on the cigarette and tobacco industry. Bigness in industry, particularly when a relatively small number of firms is engaged in a particular line, is frequently suspected as indicating monopolistic tendencies, or what some more euphemistically call "imperfect competition." However, as students look into these situations they find a complex of legal-economic arrangements that are sanctioned by custom, tradition, legislative action, and the courts. There is nothing necessarily wrong with bigness, yet frequently there are practices that might be corrected for the benefit of producers and consumers. Nichols, for example, suggests that graduated rates of excise taxes on cigarettes would place producers of low-price brands in an improved competitive position with regard to producers of the standard brands.

Much of agricultural processing and distributing is still in the atomistic stage, with many firms, large and small, participating. Yet the evidence available indicates an unmistakable trend toward consolidation and growth in size of firm. The BAE for example in the Marketing and Transportation Situation for April this year presents some revealing facts on trends in the number and size of plants producing manufactured dairy products. And John H. Brewster in a USDA publication, Cottonseed Oil Mills: Their Comparative Efficiencies and Effects on Prices and Producers' Returns, June 1953, indicates that the size of marginal mills has been increasing since at least 1926, with a steady decline in the number of the smaller mills. Brewster also presents some interesting facts on the comparative efficiencies of cottonseed crushing mills by type of mill—hydraulic press, screw press, direct solvent extraction, and pre-press solvent—for different volumes of operations.

We need many more studies such as these, along the lines pioneered by Hoffman, Nichols, and Brewster. And I should add Bressler, with his studies particularly of milk-distribution routes. We need comprehensive, thorough-going analyses of the practices and the trends in the soybean

processing industry, the rendering industry, the flour-milling industry, the bakery industry, the dairy manufacturing and distributing industries, the textile industry, the feed-manufacturing industry, the wholesale distribution systems for different products, the retail industry, and so on through practically every stage of processing and distribution for the various agricultural commodities.

What are the objectives of such studies? Well, first perhaps, we live in a dynamic age. Things are changing. The agricultural marketing industries are showing evidence of growth and consolidation. We need to know more accurately and in more detail what changes are taking place, so that we may be in a position to make constructive suggestions as to how advantage may be taken of economies of scale, of the comparative efficiencies and inefficiencies of different types of operations, and as to ways of remedying questionable practices that are becoming institutionalized in some cases. I am not suggesting that we as research workers and educators should concern ourselves too deeply in direct activities to bring about change; we must first discover the facts and relationships, and then plant ideas as we would plant seeds. If the ideas are constructive they will take root and grow, and industry itself in due time will make the harvest.

IV

There is another broad field in market organization where relatively little comprehensive research work is being done. And that is the organization of the market for conducting foreign trade. Well, we may say, that field is broader than just agricultural products. It takes in exports and imports of industrial raw materials and manufactured products as well. Besides, the Department of State is looking into this, and the Tariff Commission, and the Congress itself takes a hand in this subject from time to time. Moreover, everyone knows that in the long run we must import as much as we export, and we're not doing it. So we have a dollar shortage in foreign countries. All we can do is hope for the best, and send a few emissaries abroad to see what they can come up with in the way of stimulating exports of agricultural products.

Now this is a very opportunistic attitude. Foreign aid programs and international crisis will not bail us out forever. It's true that the Department of Agriculture in Washington has paid a little attention to the over-all problem of foreign trade. But so far as I know only two experiment stations have active projects in this field. The field is so broad and so difficult that it certainly warrants the attention of some of our best research workers throughout the country.

I am not going to attempt a solution or even a line of attack for this problem. I call it to your attention as one deserving much thought and study.

V

Getting back to more intimate particulars, I would like to mention the field of costs of operations of plants or firms in relation to size as a field for more intensive study. This is perhaps a part of the field having to do with trends in the number and sizes of plants mentioned earlier. But there are static as well as dynamic elements in our marketing system. Many plants maintain too small a volume of business for economic operations. Such plants tend to establish the marginal costs for their particular segments of marketing. In many cases the organization of the firm should be modified, if feasible, to permit a lower cost as percentage of sales either by increasing volume or reducing plant size and hence investment. The latter alternative might involve elimination of certain plants or reduction in their functions.

This type of analysis might profitably be applied at many points in the marketing system. Study might be made for example of packing sheds, country elevators, milk plants, creameries, canneries, cotton gins, slaughter houses, feed-mixing plants, cotton and tobacco warehouses, grain storages, refrigerated warehouses, wholesale warehouses, and retail stores.

There are, of course, several offsetting factors that tend to keep marginal plants or firms in business. Many cottonseed oil mills for example have remained in business under otherwise uneconomic situations because their capital costs have long been written off. In some communities, moreover, it is possible to obtain labor at sub-standard rates because of the relative immobility of labor. And many enterprises engage in additional lines of activity where overhead costs may be shared by such other activities.

VI

Another topic of considerable importance in our agricultural marketing system has to do with the organization of the market by location of function. We could with profit, I think, study the relative efficiency or cost of straight-line marketing channels compared with the devious marketing channels that exist for a number of commodities.

Wool marketing offers a good example of what might be called non-linear marketing channels. The domestic wool marketing structure is in part the result of a series of historical accidents. Why is it necessary today for domestic wool growers to send their wool in the grease all the way to Boston for storage and sale? Would it be more economical to have wool scouring centers close to production areas? The answer to questions such as these would require a complete study of the wool marketing structure without preconceived notions and with complete freedom from the bias of association with entrenched interests.

Similar problem areas exist for a number of other commodities. Where should the bulk of grains be stored--on farms, at country elevators, at terminal markets? What can be done to simplify the devious routes of livestock to market? I am sure that other examples of triangular or circuitous marketing channels will occur to you, and that savings in costs can be effected through studies aimed at a more rational location of marketing functions.

VII

And now I would like to get over into William Crow's field a little, and speak of facilities. He spoke to us the other day and showed how savings in cost can and are being made through facility planning. He did speak briefly on how one learns to be an expert in facility planning, mainly by doing, and on the part of the State agencies by working with the experts from Crow's shop. But so far as I know there is no formal research under way on the principles of facility planning. He tells me that most of the principles his shop uses have been learned the hard way, by trial and error. For example, in planning the height of railroad receiving platforms the planners originally accepted without question the recommendation of the Association of American Railroads of a 39-inch height. Subsequent experience has shown that a 55-inch height is more efficient for loading and unloading refrigerator cars, and a 45-inch height is more efficient for box cars.

Crow and his people have done an excellent, one might even say a spectacular, job in facility planning. Yet the surface has only been scratched. There is a tremendously large succession of facilities from the farmer to the consumer, most of them small and local in character. Here is a wide field for planning by local and State agencies. Mr. Crow's shop is comparatively small, and obviously cannot do all this work. It must be done, if it is done at all, by local people on the spot--people who are somewhat acquainted with the needs for modernization of country elevators within the State, cotton gins, cold-storage lockers, milk plants, and so on. Perhaps the local planners will have to learn by doing, starting with one or two facilities of a given kind, and applying the skills acquired to other facilities of the same kind throughout the state. I am sure Mr. Crow will be willing to act as consultant, and will try to answer any questions on principles of planning or on methods of procedure that he can. It will not be necessary, however, for State and local planners to duplicate all the skills developed in planning large interstate facilities for which specialized knowledge has been gained by federal workers. The wide opportunity for planning local facilities can hardly be over-estimated. Here is a field where more of the state agencies need to acquire skills so that facility planning, where needed, may be conducted over a much wider area than is now possible.

VIII

In summary, I have touched somewhat briefly on a number of topics or problem areas in the field of research on market organization and facilities. I have discussed institutional barriers impeding the flow of farm products to market, some problems in pricing farm products, the evidence of change in the organization and structure of firms, the need for research on problems of foreign trade in agricultural products, the cost of operation of plants or firms in relation to volume of business, the organization of the market for particular commodities by location of functions, and the need for State and local agencies to acquire experience and skills in facility planning. I am sure that there are other problem areas in this broad field of research that, on reflection, will occur to you.

Presentation at General Session
Thursday morning, August 13

SERVICE PROGRAMS OF STATE DEPARTMENTS OF AGRICULTURE AND BUREAUS
OF MARKETS TO IMPROVE MARKET ORGANIZATION AND FACILITIES:
APPRaisal OF CURRENT WORK AND FUTURE NEEDS

John A. Winfield, Director, Division of Markets
North Carolina Department of Agriculture, Raleigh, North Carolina

It is a great responsibility and honor to be privileged to represent the State Departments of Agriculture and Bureaus of Markets on the 1953 National Marketing Workshop program.

We are appreciative of the opportunity to explain the contribution we seek to make in the movement of agricultural commodities along the way toward end uses. We are in touch with this movement from day to day in certifying the quality of farm commodities, in administering control programs, in assembling and disseminating market news information, and in conducting other general service work in the marketing field. We use the results of research findings constantly without properly appreciating, in most instances, the effort expended by research people in making these findings available for application. We carry these results out in the field daily in an informal manner. We do some educational work, and are afraid to admit it because we could be accused of stealing the thunder of other agencies.

We come to you, then, confessing our sins, begging forgiveness, and offering our cooperation in an integrated program to improve market organization and facilities because we sincerely believe the total resources of research, education, and service agencies in the marketing field if properly harnessed--coordinated, let me say--will allow us to go forward in reaching our optimum production potential and in converting this production to the general welfare of all the people.

Marketing programs over the country vary. Service and regulatory responsibilities are handled by different agencies of the government in the different states. The organization of the California Department of Agriculture, of New York, and of North Carolina is vastly different. The Division of Markets in the California and New York Departments of Agriculture are organized in bureaus which cross-commodity lines, while in North Carolina we follow commodity lines with our organization in 7 sections of the Division and cross these lines in 4 sections. In South Carolina, Maryland, Indiana, and perhaps other states, many of the customary regulatory and service programs in marketing are administered as a part of the Extension program. The Crop Reporting Service, and Weights and Measures are bureaus within the Division of Markets in California and many other states. These services are separate Divisions of the North Carolina Department of Agriculture. Arrangements for

carrying out these programs have been provided for by legislative bodies in most of the states, and evidently are meeting the needs in their respective states; otherwise changes in line with the thinking of those responsible for the marketing of agricultural products in these states would be made, or will be made.

This situation points up sharply the difficulty of arranging for uniformity in cooperative agreements between the U. S. Department of Agriculture and between agencies charged with the responsibility of carrying out these programs in the states. It also serves to emphasize the need for versatility on the part of specialists with the U. S. Department of Agriculture and with state agencies. Change comes about rather slowly. However, changes that are obtained as a result of careful deliberation on the part of state and Federal people responsible for marketing service programs are much more effective in operation than if an attempt is made to unduly force these changes and to seek extreme uniformity on the Federal level without recognizing the different problems and approaches toward the solution of these problems.

This condition also brings us to what we think is the real root of the situation, the real purpose of the National Marketing Workshop program, which is: To bring the research man, the economist, and specialists in extension and service work to a better understanding of each other's problems. We need to realize that if we are to acquire efficiency in the marketing of agricultural commodities, we must draw upon the personnel resources of each of these agencies and direct the activities toward an integrated program, and each of us must make an honest effort to understand our mutual problems and work together cooperatively to accomplish the objectives. We should also realize that in most cases we draw our sustenance from the taxes of all people; therefore, we should think first of all the people in offering a packaged marketing program that represents the best thinking of each and all of us.

We are moving in that direction more quickly than some of us might think. Research in plant breeding saved the tobacco industry of North Carolina by quickly developing Black Shank and wilt resistant varieties of flue-cured tobacco. The Extension Service spread this information in the remote areas of our state and received cooperation from all segments of our economy in carrying these results to the so-called grass-root boys. This had to be done and done quickly because we receive more than 50 percent of our total agricultural income from tobacco.

I hope you will pardon me for personal reference. I happen to be a small farmer growing some tobacco, as well as a worker in the field of agriculture. You can see, therefore, that I am particularly appreciative of research and extension work and the great contribution that can be made, not only from the standpoint of a long time outlook, but also from the standpoint of conditions bordering an emergency when quick solutions are a necessity.

If we are to give you specifically what we are trying to do toward improving market organization and facilities and properly evaluate this work, then we must give you briefly the approach we take in the Markets Division of our state. There are no national precedents or patterns in pure service work except in the following fields:

- (1) Regulatory - certifying the grade and quality of agricultural commodities moving or expected to move in commerce.
- (2) Control - enforcement of state and Federal statutory provisions regarding the movement of agricultural commodities.
- (3) Market News - The Division of Markets in our state is divided, as previously mentioned, into 7 commodity sections. For this discussion, we want to report on the work handled by three sections--tobacco, cotton, and livestock.

We selected the three mentioned because tobacco is the major source of agricultural income, and in the Division we expend less money in this section than in any of the remaining nine sections except cooperatives and transportation. We employ only two specialists in this field as compared with three specialists and two laboratory technicians in cotton, and four specialists in livestock. We selected cotton because our approach is primarily of a technical nature, and livestock because we think it offers as outstanding an example of cooperation between research, extension, and Department of Agriculture employees in the field of marketing as you will find anywhere in the country.

TOBACCO

In tobacco, we believe that our first job is to improve the sorting and conditioning of tobacco after it is in the pack barns and in the process of being prepared to place on warehouse floors for sale. We begin a direct action program on this problem just prior to the opening of flue-cured markets in August and continue through January when the burley markets close in western North Carolina. Meetings for demonstrations in sorting, tieing, and conditioning tobacco are arranged by county agents, vocational agriculture and veteran teachers. Our junior tobacco specialist conducted 40 of these demonstrations during the last marketing season. He was assisted by extension personnel whenever available and used, at all times, pertinent research information cleared in conferences with extension tobacco specialists. This program must vary from year to meet changes in crop conditions affecting quality and demand.

We think the second most important specific service job in improving the marketing of tobacco is to furnish technical advice and assistance to producer groups planning to organize cooperatives to operate sales warehouses. Let me point out, however, that this service is offered only upon request and that it is also available to private groups when requested.

The organization of a successful cooperative demands a clear understanding of the problems of organization, operation, and finances, and the ability to impress upon groups planning to organize cooperatives the hazards as well as the advantages in such an undertaking. Our specialist in cooperatives assists the senior tobacco specialist in this undertaking. The conference method is used in perfecting plans to raise local capital, arrange loans from local banks or from the Bank of Cooperatives, secure charters, select directors, purchase sites, construct or rent warehouses, and set up machinery to operate these warehouses. We meet with the directors at preactually all regular and called meetings during the organization period and during the first year of operation. We have the responsibility by State statute of supervising the financial affairs of all cooperatives operating in the state. It is mandatory that copies of annual financial reports be furnished our office for study and recommendation.

During the last four years, four cooperative warehouses for the sale of tobacco have been organized. It takes approximately \$300,000 of capital to operate a tobacco sales warehouse. One of these warehouses, located on a small market, was liquidated due to poor management and insufficient volume, but without financial loss. The remaining three, located on large markets, have been very successful and have saved grower-patrons over \$250,000 in sales charges since they were organized. Two of these warehouses have operated three years and the other, two years. A fifth cooperative warehouse started sales this year. We expect to see this movement increase unless economic conditions turn downward and tobacco producers are unable to raise the necessary funds to continue this cooperative undertaking.

Operators of all tobacco warehouses in North Carolina are required by law to furnish us at the end of each month during the sales season a notarized report showing total producer sales in pounds and dollars and total resales in pounds and dollars. We had 333 warehouses in the state during the 1952-53 season. Generally, ownership of warehouses and replacements show changes of from 1 to 5 percent annually. Close contacts with local Boards of Trade and warehouse operators, however, enable us to secure this information (it has to be 100 percent accurate and complete). We have never had to bring enforcement proceedings to secure these reports. This information is used extensively by all segments of the tobacco industry, and the contacts made in securing it are of great value to us in planning service programs.

The third phase of our service program in tobacco has to do with coordinating the total tobacco program. We are fortunate in having as our senior tobacco marketing specialist a man with a great amount of practical marketing experience in both the United States and foreign trade. He did most of the detail work in 1946 in organizing the North Carolina Tobacco Advisory Council, and serves as secretary of this group. The Council is sponsored by the Governor and has in its membership key representatives of research and extension at State College and Duke University, the State PMA Committee, the North Carolina Department of

Agriculture, manufacturers, warehouse operators, farm organizations, farmers, and merchants. This Council is at present headed by the Commissioner of Agriculture, who recently succeeded the Director of Research at State College. The purpose of the Council is to coordinate the thinking and action of representatives of the tobacco industry, and to plan for its future program and development. It piloted the formation of the Tobacco Stabilization Corporation in 1946 and Tobacco Associates in 1949. To read the list of its membership is to recognize that its recommendations carry tremendous weight in all areas of the tobacco business.

The fourth and final phase of our service program in tobacco marketing could be labeled controversial. Our senior specialist serves as secretary of the National Tobacco Tax Research Council. This group has an annual operating budget of \$52,000 and maintains a full time office and staff in Richmond, Virginia. Its purpose is to oppose any increase of taxes on tobacco and tobacco products at all levels of government—national state, county, and city—and to work for the reduction of such taxes now existing. This is done with the belief that there is a saturation point in these taxes and that they have a tendency to discourage the domestic uses of tobacco which, in turn, reduces the receipts of tobacco producers.

In connection with this fourth phase of our program, I would remind you that North Carolina produces two-thirds of the Bright Flue-Cured tobacco grown in the United States—the principal type used in the manufacture of cigarettes. North Carolina tobacco producers received \$450 million for tobacco in 1952. This return accounted for roughly 58 percent of our total agricultural income.

The Federal government collected just over 1.5 billion dollars from the 8 cents per pack tax on cigarettes in 1952, or \$1.33 for each pound of tobacco used in the manufacture of these cigarettes. The producer of this tobacco received 52 cents per pound.

We, along with the other states producing flue-cured tobacco, levy 10 cent per acre to support Tobacco Associates, whose primary purpose is to promote the sale of tobacco in export channels. Producers voted overwhelmingly in a referendum held in 1950 to make this levy. They have the privilege to request a return of this assessment at any time. Thus far, only one producer has requested a return—this amounted to 30 cents.

Finally, as we leave the evaluation of this phase of our Division program to you, allow me to point out that the salary and expenses of our senior tobacco marketing specialist are paid entirely from state funds. The grading and market news program in tobacco is primarily a Federal responsibility, even though we make a token payment in support of the market news program and release the daily reports through our office. We believe our service program in tobacco marketing is properly directed and pays good dividends. We also believe that in this program we

recognize the need for, and are working together toward improving, the marketing of tobacco not only in our state but in all channels in which tobacco produced in the United States moves.

COTTON

For decades North Carolina agriculture followed the age-old pattern of a single cash crop, tenancy, exploitation of human labor, and the dissipation of soil resources. Cotton was the cash crop. Diversification came in the mid 20's with agricultural leaders and the press idolizing the farmer who could survive without growing cotton. Today, our goal is balanced farming and we attempt to evaluate a cash crop not on the basis of gross income but as it facilitates the efficient use of land, labor, and capital in producing maximum net income.

This advanced program in North Carolina has brought about a reduction in the number of acres planted to cotton from an average of more than 1-1/2 million in the five-year period 1921-1925 to 688,000 for the period 1943-1947 and 724,000 for the 1948-1952 period. Most of the state's agricultural leaders are convinced that 700,000 acres of cotton yielding one bale or more per acre is a minimum in our balanced farm program.

Again we are fortunate in having as head of the cotton section a practical gin engineer familiar with cotton marketing problems and qualified to work with organizations and government agencies concerned with cotton.

Studies prior to 1948 indicated two serious handicaps to profitable cotton production in the state. These were (1) "hog round" marketing, that is, selling cotton at the farm or gin level, and at small receiving points without benefit of grading or classification; and (2) blanket discounts on account of poor gin processing. Actually, North Carolina mills were getting away from North Carolina cotton. The studies mentioned above plus the field experience of our specialists provided ample evidence that technical assistance to cotton gins offered the most practical solution to our cotton marketing problems. We were able to secure local funds and AMA assistance to get an improved program under way in 1948. We hired two gin specialists and put them to work. We believed we knew where we were going and how to get there.

We began our service program with a gin-to-gin inventory of gin facilities and made spot inspections of gin elements for adjustment and repairs. Also, we evaluated each gin for adequacy to meet conditions in its area of production. When the ginning season got under way, we made a second inspection trip to check on (1) operating techniques and "know how" of gin employees, (2) local harvesting practices as reflected in the seed cotton brought to the gins, and (3) marketing customs prevailing from area to area. The data acquired through gin-to-gin inspections determined our recommendations for improvements for each particular gin.

We never develop blanket or stereotype recommendations--this policy, we believe, explains the excellent cooperation we receive from North Carolina ginners. We were able to be of some assistance to each of the 500 gins visited in 1948. This assistance varied from gin to gin and ranged from the making of simple adjustments and discussion of operating techniques with employees to the drawing up of detailed plans for new gin installations to operate in 1949. We have followed this procedure for five seasons and have averaged just over 1-1/2 visits yearly to each of the state's remaining 451 cotton gins. We have expanded the scope of our services yearly to take care of new developments in gin engineering and new pre-ginning processing incident to mechanical harvesting.

Nearly 50 percent of our ginners are affiliated with county or area groups organized primarily for mobilizing the ginning industry in support of a better agriculture. We modestly take credit for these ginner organizations. Their meeting dates are so arranged that one of our three specialists can attend each meeting. County agents and state extension specialists find these groups most cooperative in supporting educational programs. We release a gin letter at intervals depending on time of year and timeliness of subject matter. This letter is mentioned only for its effectiveness in breaking down the distrust which is common in state agency and industry relationships. Our specialists are accepted more as members of the ginning industry than as state employees.

In evaluating this service program, we must remember that our objectives are shared by all agencies concerned with cotton and that there is no way of ascertaining just what is creditable to any one agency. We do insist that whatever contribution our service program has made to the improvement of North Carolina cotton, it could not have been done without the good will and encouragement of the raw cotton interests and other state and Federal agencies concerned with cotton.

Rough preparation of cotton in North Carolina has dropped from 16.4 percent in 1947 to 1.3 percent in 1952, according to USDA cotton quality statistics. In dollars and cents, the 75,000 bales rough ginned in 1947 meant a loss of nearly \$2 million in farm income. In 1952, the number of bales showing rough preparation was 7,400 with a loss of just over \$66,000.

North Carolina ginners have spent approximately \$2 for new machinery for each bale of cotton ginned since our service work began. Despite our small per-unit ginnings, our gins compare favorably with those in larger producing areas. Our ginners are keeping abreast with the adaptation of their facilities to mechanical harvesting.

We have been complimented by the State of Virginia in requesting that our services be made available to their 26 gins. We have been doing this for the past two years. Also, we have furnished Louisiana, upon request, some assistance in making plans to set up a similar program.

As a companion service in our marketing work, we have recently established a cotton fiber testing laboratory in order that North Carolina cotton may have the same advantages market-wise as cotton from other areas. This service has been well received by cotton mills and cotton merchants. Our specialists work with mill technicians very much as we work with gin machinery sales engineers. We believe that our laboratory has accelerated the establishment of commercial and private laboratories and the more extended use of laboratory tests in marketing as well as processing.

In spite of the great savings shown from cutting rough preparation in our cotton--and the increase in selling on a graded basis--the greatest results of the program are intangible and cannot be evaluated. Improved ginner-customer relations, cooperation in promoting better business practices, plus the bringing together of farmers, ginnerys, merchants, and spinners in a concerted effort to adapt production to end-use requirements have implications beyond monetary values.

LIVESTOCK

Sale of livestock, other than hogs, has been of minor importance as a source of farm income in North Carolina for many years. Estimates based on volume and sources of meat sold through grocery stores and restaurants indicate that some two-thirds of the supply is procured from outside the state. Large numbers of North Carolina hogs move to packing plants just over the state line for processing.

Acreage control programs on cash crops, emphasis on a balanced farm program, and the development of more adaptable clovers and grasses have contributed to the expansion of permanent pastures and to an increasing interest in livestock production.

The need for increased attention to livestock in general, and marketing in particular, has led to the development of a team composed of research, extension, and service personnel who, through a cooperative approach, are coordinating their efforts for the improvement of livestock development in our state. Sharp lines of demarcation among these three services have been forgotten. We plan our work together democratically and without prodding from the "powers" that be. In fact, the so-called "powers" rally to furnish the tools--the appropriations to push the livestock program.

In December--we should call this planning and evaluating month for service personnel--representatives of the three services do basic program planning for the year ahead. These plans are carried out jointly, if possible, by personnel from the three agencies. Conferences are also held at irregular intervals during the year to view the progress being made and to suggest any changes that might be desired. We recognize that it is difficult to draw a line between production, marketing, and promotion.

We get the year under way with a series of livestock schools which are primarily the responsibility of the extension service. These schools are planned in December following requests from county agents. Extension specialists and specialists with the livestock section of the Department of Agriculture discuss pertinent information planned in advance, but generous doses of local conditions are given the greatest attention. Research specialists and local leaders also contribute. These schools were held in 55 of the state's 100 counties last year. They are generally completed in January and February, and, for all practical purposes, are without parallel in genuine usefulness in our livestock program. This is where detailed schedules are planned for things to follow, such as, shows, sales (both purebred and commercial), lamb and wool pools, pasture and feedlot demonstrations, and visits to individual producers.

We move on into junior fat stock shows and sales and the movement of fed cattle to market following the January and February livestock schools. The shows and sales are primarily a responsibility of the Extension Service; however, we assist in sorting, grading, and judging the calves. The number of beef calves sold in these shows and sales over the state jumped from 768 animals at 22 shows in 1948 to 1,167 animals at 38 shows during the 1952 season.

In moving the fed cattle to market, which rests mostly upon us, we depend on the county agents to provide us each year with a list of cattle on feed in their counties, location, number, kind, conditions, and the desirable time to move them. We compile these lists and distribute them to all interested packers. We inspect the cattle with the county agents and recommend that they be sold on a carcass graded basis, particularly if we are doubtful that the producer knows the quality of his offerings. We employ a full time meat grader, who is paid solely from state funds to grade carcass cattle in local plants cooperating in the program. These plants must have an "A" rating from the Veterinary Division of the Department and the Board of Health. (This service got under way in April following the end of OPS.)

We graded just over 3,500 carcasses weighing approximately 1.1 million pounds during April, May, and June of this year. We also assist the plants cooperating in this program in selling North Carolina graded beef to state institutions, chain stores, and restaurants. I might add that the State Restaurant Association is a key sponsor of the meat grading program.

We conducted cooperatively 26 lamb pools in 1952 through which 10,726 lambs were marketed. We also held three wool pools handling 163,000 pounds of wool. The scheduling and detail planning of the lamb marketing and wool program is primarily our responsibility. We are assisted, however, by county agents and other extension personnel.

Feeder calf sales sponsored jointly by the livestock section of the Division and the Extension Service get under way in September. These sales are organized in detail--regulations are specific and enforced to the letter under our joint supervision. Since a selecting committee headed by the county agent in each county inspects all calves nominated, we know in advance the number of calves that will be offered and the condition of each lot. Calves are sorted in lots by size, sex, breed, and grade so that uniform feeder calf "packages" may be offered to buyers.

Prior to 1952, sponsorship was a three-way affair with local chambers of commerce, local market operators, and individual commercial producers participating. We found it necessary to change this arrangement to hold down the number of sales so larger numbers of calves could be concentrated which, in turn, would attract more buyers. Thirteen sales were held last year in which 3,343 calves were sold. This compares with 8 sales in 1950 in which 1,232 calves were sold and 9 sales in 1951 in which 1,806 calves were sold.

This demonstrational marketing program has grown rapidly in the last three years. A year is spent in producing these feeder calves, and this, for the producer, is a climax to a year's work. We are interested in a quality program and, as our numbers increase, more rigid regulations will be made. In fact, we are anticipating accepting only calves that will grade good or better for some of the sales this year. For lower grade cattle, market facilities are available through our 87 auction markets which, I might add, are about three or four times more than we need.

The Division initiated a service program in 1941 by setting up a revolving fund of \$20,000 to finance the purchase of replacement ewes and female cattle for distribution to farmers, on order, at cost.

We purchased and distributed 1,470 western ewes in 1942--the first year in which this fund was used--and 3,686 in 1951. We were down to approximately 1,500 head this year. We brought in from outside the state 1,700 head of female cattle in 1950; 2,400 in 1951; and 1,102 in 1952. The fund was created primarily to assist in balancing the agricultural economy of the state and to move grass cattle from the mountains of Western North Carolina to the grain growing areas of Eastern North Carolina. We use it as a tool to move livestock. Its usefulness is decreasing now, not because of the livestock price situation, but because cattle numbers have built up to a point where private industry and trading between individuals will fill this gap. County agents pick up the bulk of the individual orders and distribute and collect from individuals ordering livestock under the program. We purchase the livestock in producing areas and supervise loading and shipping.

In evaluating the program, allow me to point out that the inventory of beef type heifers and cows one year old and over in the state increased from 67,000 on January 1, 1948, to 159,000 on January 1, 1953. We anticipate further but less spectacular increases in beef cattle. The

present market situation is "shaking out" the main street farmer and speculator and allowing the real farmer--the "alert grass root boys"--to consolidate their position and to move forward in beef production.

Sheep numbers have fluctuated between 31,000 and 44,000 head during the last 15 years. I would guess--and let me say this is a guess--that the next decade will see this range from 40,000 to 60,000.

We have purposely omitted swine from this discussion because of time limitation and because swine production in Eastern North Carolina is, and has been for many years, a major part of our total agricultural program. We are the second largest producer of swine on the East Coast. Comparatively speaking, our sharpest immediate marketing problems are mostly in deficit commodities.

We work on the theory that a successful livestock program is flexible and practical. Once end results are attained in one phase, we seek new avenues of approach to other problems. We attempt to keep in mind (1) "What are we doing?" and (2) "Where can we go from here?" to attain maximum service for agriculture, and the general economy of our state.

Credit for the organization of this service program in livestock is due to a recently retired Director of Livestock Extension at North Carolina State College who worked faithfully for many years before specific statistical progress could be recorded. A firm foundation, however, was built during those years to make this program representative of the better way of life in southeastern agriculture.

CONCLUSION

Now, in conclusion, let me apologize for using a cross-section of our programs in North Carolina in discussing this project. We know that many of the states have service marketing programs that are more effective than ours. If we were to make only one recommendation in regard to improving market organization and facilities, we would say simply that the program must be planned to meet local marketing problems.

The livestock program discussed here would be elementary in Texas and Iowa, or in other areas where livestock and livestock products account for a large part of the agricultural income.

Our cotton program would be out of place in California where only 8,355 farms harvested cotton in 1949, and 190 gins processed an average of 8 to 10 thousand bales per gin, as compared with 105,312 farms harvesting cotton in North Carolina and 451 gins processing roughly an average of only 1,300 bales. Cotton production and market processing in California could be compared to a vast, efficient industrial organization with production limited to certain areas with similar climatic conditions. This, in turn, simplifies to a certain extent initial market processing and promotes uniformity in end products.

The economist could view this hasty comparison and wonder why we continue to produce cotton. The answer will be found when purely local advantages are evaluated--such as, (1) savings in transportation charges because of short hauls to spinning and cloth making centers, (2) adequate and strategically located cotton storage warehouses, (3) and most important, the efficient application of research results obtained in studies, based primarily on local conditions affecting the production and marketing of our cotton.

I want to re-emphasize what my good friend, Paul Nystrom, so able presented to us last Saturday: We are partners--and, when I say we, I mean Research, Service, and Extension--in the solution of marketing problems. It makes no difference whether the funds for maintaining these services come from private sources or from taxes administered by the Federal or State Departments of Agriculture or land-grant colleges and universities. We will receive direct support from all the people to better market organization and facilities in proportion to the success we achieve in understanding each other and in coordinating our efforts to improve the marketing of our country's agricultural products.

Presentation at Luncheon Meeting
Thursday, August 13

THE ROLE OF MARKETING IN OUR DYNAMIC ECONOMY

O. V. Wells, Chief
Bureau of Agricultural Economics

The basic role or functions of marketing within the U. S. economy are so clear as to need little discussion. So after a short statement as to what I conceive this role to be, which may serve as the basis for further questioning, I also want to consider with you some of the conflicts within our marketing system and the questions which are being raised about marketing efficiency--questions as to what it is and how the benefits are distributed.

I

Some people find it difficult to think of "marketing" as part of the modern production process. Yet, it is just this. Agricultural products must be stored, transported, processed, and delivered in the form, at the time and places which consumers want.

Beef cattle in Texas, or even a Midwest feedlot, are of no use to the housewife in Pittsburgh who wants a roast for dinner, or the restaurant owner in New York City or San Francisco who makes a specialty of steaks. Oats in the Midwest or rice in Louisiana or Arkansas are a far cry from the breakfast cereals which we are told are so good for hungry boys. And flue-cured tobacco, even as it comes bright and yellow from the farmer's curing barn, or cotton at the gin, still look quite different from cigarettes or dress material.

It's true that farmers at one time sold many of their products directly to consumers and that either the farmers or the consumers did much of the actual processing or fabrication. And some consumers still buy some products from farmers. But specialization is now the general rule and with specialization the functions which we cover under the term "marketing" are separated from the functions associated with actual growing of farm commodities or "production."

As the process becomes increasingly complex, more and more steps or essential functions begin to intervene between the farmer and the final consumer... In fact, agencies or individuals come into existence whose business is simply to facilitate exchange or ownership--commodity exchanges, brokers, commission houses, etc. Complex questions also arise as to the allocation of supplies as among buyers, of returns among those contributing to the final product, and as to how well this complex system of agencies and functions serves as a medium of

communication between consumers and prime producers, especially farmers--that is, how effective the pricing system actually is in assisting farmers in so planning for the future as to produce those products which consumers most desire at the time and in the quantities wanted.

In a recent article, I endeavored to summarize the role of our modern marketing system by centering attention upon what it seems to me are its two main objectives:

- (1) From the service standpoint, it is the function of the marketing system to move the desired varieties of farm and food products to consumers in the desired forms and conditions at the lowest possible cost.
- (2) From the business standpoint, it is the function of our marketing system to make a living for those people working in it and to allow reasonable returns to the capital and management skills involved.

You are all aware, of course, that we depend upon competition to keep these two objectives in line, to see that they in effect amount to the same thing. In a free-enterprise competitive economy, a businessman who expects to cover his costs and make profits must offer those goods and services which consumers want. It is, of course, the more efficient businessman--defining efficiency either in terms of offering the same goods and services at lower costs or more goods and services at the same cost--who survives in a freely competitive field.

II

One should never conclude, however, that there are no conflicts of interest in the marketing field. Competition itself is a form of continuous conflict between agencies engaged in the same line of business--a healthy form of conflict and one which we all believe should usually be encouraged. But there are also conflicts as between different products and to a considerable extent between prime producers--that is, farmers--consumers, and the interest of various marketing agencies themselves. Suppose we take a look at what farmers and various marketing agencies and consumers want.

What farmers want from the marketing system is perhaps as well explained in the preambles to the various State laws authorizing farm cooperatives as anywhere else. Several of these laws, enacted in the early 1920's, start with the statement that the objective is to "encourage the intelligent and orderly marketing of agricultural products ..., to eliminate speculation and waste ..., to make the distribution of agricultural products between producer and consumer as direct as can be efficiently done; and to stabilize the marketing of agricultural products."

These same essential objectives are restated at some length in the introductory sections to Title II of the Research and Marketing Act of 1946. Let me refresh your memory. Title II starts with a Congressional declaration that "a sound, efficient, and privately-operated system for distributing and marketing agricultural products is essential to a prosperous agriculture and is indispensable to the maintenance of full employment and to the welfare, prosperity, and health of the Nation."

Further, the policy is to promote a scientific approach to the problem of marketing, transportation, and distribution of agricultural products similar to that which has been so successfully utilized in connection with the production of agricultural products "so that such products capable of being produced in abundance may be marketed in an orderly manner and efficiently distributed."

To this end the Congress indicated its intent to provide for continuous research, for cooperation among Governmental agencies, producers, and industry organizations, and for the integrated administration of activities to aid in the distribution of agricultural products in order that "marketing methods and facilities may be improved, distribution costs may be reduced, the price spread between the producer and consumer may be narrowed, dietary and nutritional standards may be improved, and new and wider markets for American agricultural products may be developed."

To the salesman, or even more important the sales-minded executive, the American market is big, exciting, different. Seller or marketing firms which intervene between farmers and the consumers want to do business in such a way as to increase sales volume and income. It is up to them to make the most of the market, either to catch the consumer's attention or the attention of the retailers or others who do sell to the final consumer. This leads to advertising and the development of new services and new products not only in an effort to get a larger part of the established market but also in an effort to enlarge the total market.

Some observers look on marketing as merely a passive function--that marketing agencies should simply stand ready to supply consumer demands; but in a growing, dynamic economy where competition is the chief coordinator, where the economy of scale still operates, and where there are often special rewards to innovation, marketing agencies are continually endeavoring to actually create new or larger demands. Perhaps this makes marketing more of a gamble in some ways, but it is also a chief factor in economic progress.

Just as those who control marketing agencies are interested in maximum returns for their stockholders, so are the laborers engaged in marketing interested in better wages as a means of sharing in the rising American standard of living. This desire of laborers for better wages is becoming an increasingly important factor in our marketing cost structure as labor becomes better organized. Few businessmen can continue operation unless they do something more than cover operating costs, and taken all in all, labor costs are by far the most important single factor within the marketing bill.

Finally, what does the consumer want?

The average American consumer who year in and year out uses about 90 percent of the U. S. produced farm commodities expects the marketing system to keep goods continuously flowing into the retail outlets which are handiest to him, preferably at prices which also contribute to a gradually rising standard of living. This is a tough goal. But one of the axiomatic facts from which all economists start reasoning is that consumer incomes are limited. And as prices move up, consumers do often slow down buying. American farm products also move in the foreign market and here, too, despite all the intervening trade difficulties, the basic marketing function is still to find and service the final consumer.

The dollar market for consumer goods processed and fabricated from U. S. farm commodities actually runs some 2-1/2 to 3 times farmers' cash receipts—in recent years, perhaps as much as 85 to 90 billion dollars or more, including only the wholesale value of farm commodities exported, compared with annual cash farm sales of 30 to 33 billion dollars. Currently, farmers are receiving approximately 45 cents out of each dollar spent for food at retail, about 25 cent out of each dollar spent for food in restaurants, and 12 to 15 cents out of each dollar spent for ordinary clothing, household textiles, and tobacco products at retail.

Such observations as these, along with the tendency of marketing costs to gradually increase, raise some very real questions: Is enough effort being concentrated on selling the basic products, or are sales activities increasingly creating a demand for more and more services—that is, pre-packaging, refrigeration, préparation, pleasant shopping conditions, etc.? Does the existence of inflexible marketing costs so far separate farmers and consumers as to substantially weaken the traditional guidance and income-allocating functions of the marketing process? That is, there are not only questions as to what the most efficient engineering and managerial methods may be, but equally the question as to how the benefits of such efficiencies are distributed.

Presentation at Dinner Meeting
Thursday, August 13

AGRICULTURAL POLICY AND ITS IMPACT ON MARKET ORGANIZATION

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Price and income consideration occupy such an important place in farmers' thinking that agricultural policy tends to become so preoccupied with them that it is easy to forget there are other significant aspects. While our discussion will center primarily on price angles, let us keep in mind that the field is considerably broader.

It may help to see the relationship of farm prices and income programs to the market if we use as background the functions and responsibilities of the agricultural market and of the complex of agencies and institutions which are included in "market organization."

The market is the connecting link between the farmer and the consumer of his products. Its function is to move products from the place where produced to the place where needed in the amounts and at the times desired. The market has more to do than merely to take care of the physical handling of commodities. An important part of its job is to reflect to the farmer the desires and preferences of the consumers. Likewise, it indicates to consumers the kinds, qualities and quantities available. This is accomplished primarily through the medium of prices. Price becomes a crystallization of the forces bearing on the market. It is the reflector of supplies available and of the consumer's ability and willingness to pay. Price plays a very dominant role in deciding the income of farmers and in the living costs of consumers.

Because of the market's role in arriving at price levels and relationships and because of the important place assigned to prices in farm programs, agricultural policy bears very directly on markets and on market organization. This applies especially to aspects of policy which involve programs to deal directly with prices, price levels and relationships.

The term, "agricultural policy," as used here refers to public policy with respect to agriculture. While recognizing that it has its private as well as its public application, the present discussion will center on the latter.

Direct participation of public agencies in agricultural pricing has been most active during the last twenty years or so. Public policy was not unmindful of the importance to farmers of prices previously but programs were of a more indirect nature. Our protective tariff policy certainly has had as a major objective, that of raising domestic prices for protected

commodities by limiting competition in the market from shipped-in supplies. The controversy over "greenbacks" and the resumption of specie payment after the war between the states patently was concerned among other things with prices paid farmers. These and other programs, however, influenced the conditions under which the market operates rather than representing active participation in handling or decision making. In short, they helped determine the rules under which the game was played rather than to place the government in the position of an active participant.

Widespread agitation for some direct action on farm prices was in evidence during the 1920's. Specific proposals included the equalization fee (McNary-Haugen Bill) the export debenture, and the allotment plan. The first named was passed by Congress in 1927 and again in 1928 but on both occasions stumbled over the hurdle of presidential veto. These proposals placed considerable faith in the price results which would flow from removing market surpluses by selling them abroad. While it might have been possible to apply these plans so that physical handling would have remained in the market agencies, government would have had to participate actively in decision making.

Congress, in 1929, passed the Agricultural Marketing Act which established the Federal Farm Board and provided it with a revolving fund of \$500 million. This Board was assigned the dual task of aiding, encouraging and financing farmers cooperatives and of engaging in price "stabilizing" activities. The revolving fund was made available for both functions. The Farm Board was established as an independent agency outside the Department of Agriculture, but liaison with that Department was provided by making the Secretary of Agriculture an ex-officio member with the eight appointed members.

The Board came into operation in September 1929, a few weeks prior to the sharp break in the security and commodity markets, which ushered in the very severe and extended depression period. The kit of tools provided the Farm Board was entirely inadequate for an emergency of this magnitude. Its major endeavor was to stem the fall in prices by loans on or purchases of commodities, particularly wheat and cotton. It had no way of recouping its losses and no direct authority to control production of or sale by farmers.

The Farm Board can hardly have been said to have passed out in any blaze of glory. It deserves more credit than it has received on at least one account. It demonstrated the need for a much more comprehensive program if effective price results were to be obtained.

The continuation and deepening of the depression and the experiences of the Farm Board paved the way for the Agricultural Adjustment Act which was enacted into law in May 1933, approximately two months after the new administration took office. It was part of the "New Deal" of that administration.

The direct participation by government in the market which was started under the Farm Board was extended under the Agricultural Adjustment Administration and has been continued under its successor, the Production and Marketing Administration.

Our assignment is not to review the organization or functions in detail but to endeavor to appraise some of their impacts upon the market. A brief summary of objectives and means, however, is necessary background. The Agricultural Adjustment Administration came on the scene at or near the bottom of the depression trough. In that sense it was more fortunate than the Farm Board which was born on the brink of depression. Its major objective was that of improving farm incomes by raising farm prices from their depression loss. Parity price was adopted as the bench mark. Adjustments of production and market supplies were important means of price raising. Loans on stored products have been used as the principal means of providing market support for the basic commodities. Outright purchases have been employed for some lines.

During World War II, when demand improved prices for farm products generally and concern was shown over whether or not production would be adequate, price supports served in most instances as "floors" to give assurance to farmers that they could engage in all-out production of the commodities desired without fear of a disastrous break in prices. To make supports effective for this purpose, they were raised to 90 percent of parity in comparison with the 52 to 75 percent which had appeared adequate in the price-restoring period of the 1930's. More recently, production has caught up with available markets in various lines and surpluses are returning. Supports at the 90 percent level of the war period still continue. It was strong demand rather than price supports which played the leading role in raising farm incomes and cost of living during the war. Currently, however, supports on the covered products have taken on a more important place in influencing the market.

The function of the market in arriving at prices involves, as suggested previously, seeking the level at which supplies will clear the market. This leads to establishing price relationships and the whole price complex which results provide the general level of prices. Every member of this audience is so well acquainted with the facts of life in the market field that it is unnecessary to caution you that this discussion is not phrased in terms of perfect market, perfect competition, perfect monopoly, or perfection in any shape, form or manner. The market is a man-made institution. It is not an automatic recording device which provides a finely calibrated gauge from which you read price results. Prices come from the judgments of man which are evidenced by offers and bids. The knowledge of the participants in the market is far from perfect or complete, nor is it equally distributed. Bargaining power of the participants is far from uniform. Various degrees of monopoly control and other interferences to a free play of forces are found. What we get at best is an approximation to an equilibrium price. Lest this be taken as an argument in favor of letting some governmental agency take over the function of price making let us note that man does

not acquire omniscience through having an official title bestowed on him. Knowledge still is not perfect. Judgment still has to be employed and errors will still remain. In addition, price making in public hands has difficulty escaping the strain and stress of political pressures.

Price in an agricultural market does more than merely help clear the boards currently. It becomes the indicator to farmers in making their plans for the future. Farmers expanded production more than most of us dared to expect during the war. After giving full credit to the urge of patriotism, it is clear that an attractive price was the real stimulator of output. But note, it is not merely the general level but also price relationships which are watched closely. Farmers direct emphasis among the enterprises available to them on the basis of present and expected price relationships because this is a way of seeking maximum returns. Consumers likewise are sensitive to price relationships in their purchases. For instance, is there any doubt that price advantage is playing a role in the shift from butter to margarine?

A government program which undertakes to raise the price of a given commodity or commodities consequently has more impacts on the market than may be realized by the average individual. If it succeeds in its objective, the resulting price will have several effects beyond the intended one of improving the income status of the producers of that commodity.

First, we may note that a program which does nothing more than to raise a price of a given product does not create new income but merely changes the flow of the existing income stream. If additions to the income of some farmers result, it is at the expense of someone else, most likely consumers including farmers who pay the higher price, although there may be instances where there may be some absorption by the marketing margins. Other producers, including farmers, will experience a reduction in their sales and incomes.

But, if the higher price reduces the amount of the supported commodity sold and is obtained only by withholding supplies from the market, other consequences arise. As long as the government assumes responsibility for the surpluses, the costs of carrying, and any losses involved in ultimate disposal at lower prices, spoilage or destruction, are borne by the taxpayers. If consumption is reduced by the higher price, the consumer obtains less want satisfaction. If rights to produce and sell are curtailed, the affected producers must weigh gains in price per unit against losses in volume. It seems easy to forget that price by itself is sterile. It must be mated with volume to yield income.

In short, in weighing the market impact, we must differentiate between innovations which merely redistribute incomes and those which add to total incomes by improving efficiencies and increasing the means of want satisfaction by expanding production of needed goods and services.

A "managed" price does not lose its power as a guide to production and consumption. The higher price invites expansion of output and discourages consumption and leads to surpluses. If the price supporting agency allows storage holdings to build up, the market cannot ignore these holdings as a part of the supply picture. If efforts are made to dispose of them outside regular market channels, assurance that such disposal can be kept completely insulated from the regular market is not easily provided. If dumped abroad interference to regular exports may arise. Interferences with markets of other exporting nations or with domestic markets within the receiving nations are well-nigh inescapable. One point to keep in mind is that the market is a complex institution and we need to weigh consequences of programs which change its operations.

The obvious remedy for surpluses is to cut output. Reducing production by shifting resources to other employment where they will yield more is the corrective of situations of unbalanced production. But the controls provided to make price supports work ordinarily are not designed for this end. Acre controls, as past experience has demonstrated, are not synonymous with output control because of selection of land to use and more intensive production. Availability of such resources as manpower and equipment mean that the released acres will be available for other uses which may upset the production pattern so that additional controls will become necessary. Acre controls may reduce the manpower in agriculture in some instances, particularly in crops where share croppers play an important role. However, beyond such situations, production controls do not come to grips with underemployment in agriculture.

The problem of arriving at the appropriate relationship among prices is difficult. The market does not achieve perfection, but there is great advantage in the fact that the prices are subject to constant change so that there is a tendency toward an equilibrium even though it never may attain perfection. Less freedom of adjustment is available under controls.

Difficulties of establishing price relationships were encountered by OPA and OPS in their endeavors to establish and enforce price ceilings. These difficulties are no less real in establishing price floors, particularly where these are so high that they become the market price much if not all of the time. It sounds reasonable enough to most of us to say that consumers need to be protected on essentials against undue price rises in periods of explosive inflation. On the surface it appears logical to place ceilings on, say, ordinary white dress shirts while forgetting about novelty items such as sport shirts. If the consumer wants to spend his money on the latter that is his worry. But what temptations does this set before the shirt maker? Shall he make the product on which the price is restricted or shall he shift to the so-called nonessential where the sky may be the limit?

The situation is not too different with price supports. Butter is a case in point. One can advance a very convincing argument that butter at 90 percent of parity is not out of line with consumer's incomes or many other goods. But it clearly is out of line with the consumer's willingness

to pay, particularly in a period when a basic change in demand appears to be in progress. While the result might not be to the liking of the butter industry, the market would accept this dictum and would lower prices to the point where supplies would be moved. Supports at 90 percent, on the other hand, invite the consumer to speed up her shift to margarine and other products, encourage the dairymen to continue production, transfer the job of maintaining storage stocks to the public, and load down the CCC with stocks for which it has no outlets in sight. The 90 percent supports in this instance not only do nothing to bring about basic adjustments but, in fact, encourage further maladjustment while keeping the market from moving in the direction of a better balance.

Supports on cotton present a dual threat to the cotton market. Synthetic fibers are invited to take over, and other countries are encouraged to expand output and take our export markets away from us. These are illustrations of how price supports may price a product out of part of its market. They may take on the nature of a patent medicine which may ease a headache but at the expense of an upset stomach or a strain on the heart.

Production controls tend to exempt smaller growers. One reason is to simplify and reduce costs of enforcement. Another reason arises from the political aspects of favoring the "little fellow." Mechanization and technology frequently operate in the direction of giving advantage to size. The enterprise must be big enough to warrant the capital investment, the operating costs and the managerial skill needed for these innovations. (Fears that the individual farm unit stands in danger of general replacement by the large-scale corporate farm are groundless.) The impersonal nature of pricing in the market promotes rather than hinders such shifts in the direction of more efficient production. Production controls associated with price supports in instances, at least, work in the opposite direction and to that extent are of questionable service to progress. Were the same principle to guide production generally, a considerable reduction in our level of living would inevitably follow.

Price supports which take over the function of establishing price from the commodity market have impacts on another market, namely, that for land. This shows up, particularly in cases where production controls are in terms of a basic acreage allotment assigned to the individual farm. Where such an allotment is required in order to produce, or at least to sell without heavy penalty, that right acquires a value of its own. Its price is reflected in increases in the price at which the farm may be sold or in the rental which may be obtained. The public has not weighed the consequences of such capitalization of the returns from price supports. The point does not seem to have been grasped that the gainer is the seller or the landlord, not the operator. The latter finds his costs increased and acquires a vested interest in having the program continued because the loss of his allotment would nullify the

premium he has paid and, in a sense, become a capital levy upon him. Surely, this was not the objective in mind when this program was adopted.

Proponents of indefinite extension and expansion of 90 percent, or higher, supports sometimes charge those who see merit in returning to greater reliance on the market with "living in the 19th century," or with believing in a "free" market which does not exist. They may also take the tack that the market is so replete with monopoly controls that the farmers have no alternative other than to seek monopoly gains for themselves through government programs.

Perfectly free markets, or perfect monopoly for that matter, are found only as illustrations on the pages of textbooks, not in real life. My acquaintance does not include any person of competence who contends that such markets are in operation, have been in operation, or are likely to be at some future time. In fact, there may be some grounds for believing that there is more evidence of myopia with respect to the weaknesses of government price programs on the part of some of their advocates than among those who suggest we go slow in throwing the market overboard.

Markets are far from perfect. That point underlies much of the research and service work in which you are engaged. Constant effort should be put forth to find ways of doing the job better. Services need to be improved. Costs of performing them need to be reduced. Knowledge about the market needs to be increased and extended. Markets need to be made better reflectors of supplies available and the needs and preferences of consumers. Better market information, grades which reflect more accurately real quality differences, production guided by those grades, and pricing based on them to provide necessary incentives are illustrative.

Some price programs erect barriers which restrict entry into certain markets to establish a form of monopoly gain for producers and distributors operating within against the competition from without. Metropolitan milk markets supply illustrations. Surely, there is merit to the point that consumers need safeguards against health hazards. There is merit to the contention that the producer who meets the standards and who assures the market of a supply is entitled to protection against the fly-by-night or in-and-out producer. But, does anyone seriously contend that health ordinances and market orders have not been and are not being employed as protective devices for the benefit of producers and distributors who operate under their shelter? Such programs affect the pattern of production and market outlets for producers who are excluded from certain markets thereby.

One of the most persuasive arguments for government pricing of farm products is that arbitrary monopoly controls are exercised so generally by others that farmers need government aid to do the same in self-protection. It is easy to conclude that the other fellow enjoys powers and privileges we do not possess. I recall going with a friend to the office of a representative of some large coal operators. My companion

made some remark about the monopoly enjoyed by coal operators. The immediate retort was, "Why, coal is highly competitive. If you really want to find monopoly take a look at cement." Verily, the grass grows greener in the neighbor's pasture.

But, it would be ridiculous to deny that there are closer approaches to monopoly in industry, business and labor unions than in agriculture which provides the nearest approximation to atomistic competition among major lines of activity. The real question is whether this is a case where the remedy for a wrong is more of the same. Where the approach to monopoly is via government action, the major result presumably is to change the distribution of income rather than to add to the sum total. Can we demonstrate that those who receive have a more just claim than those who pay? Effective monopoly depends upon restriction of some sort. Monopoly possibilities do not lie in fields where entry is free and easy. If government is to bestow real lasting monopoly gains upon farmers, its program must be carried to the logical conclusion of providing exclusion from and restriction upon entry into farming. Are those who favor the monopoly approach ready and willing to carry their point to this logical conclusion?

There is the contention that we stand as helpless victims before private monopoly because the government is impotent when it comes to effective controls. If government is so ineffective on this front, why should we be so eager about extending its powers into other fields? But, is it true that we are so powerless and ineffective? Have we gone the limit in the exercise of our powers and potentialities in this field? Moreover, is it so inconceivable that a government monopoly might not take on some of the characteristics of a Frankenstein? Who is to control the government monopoly when it gets off the reservation? The remedy in such an instance may be said to lie with the voters. That is true, providing the issues become so sharply defined that narrow and immediate self-interest cannot eclipse the general and longer run welfare. It still remains, however, that the feat of unscrambling eggs is much more difficult than of scrambling.

In my younger days, a quip went the rounds to the effect that all one had to do to create an economist was to train a parrot to repeat "supply and demand" as the answer to any question asked. Observation over the years, however, reveals that the individuals I have overheard referring to the "inexorable law of supply and demand" have been other than economists.

We have not repealed the law of gravitation in order to fly planes. Man has learned how to use countervailing power to keep planes in the air. Man likewise makes adaptations in and to forces of supply and demand and all the variety of factors which play upon them.

There is nothing sancrosanct about the market. It is a man-made institution. It is operated by man. It is subject to human error. It is not only logical to seek improvement in the market but doing so is a definite responsibility of those present and others in this field of work. Public policy has a concern in how well the market does its job. The market in turn is concerned with the impacts of farm programs on its sphere of activity. Let us not be afraid of change, but, on the other hand, let us have better reasons for change than dissatisfaction with the present. Let us use research, judgment and foresight to ferret out and apply those changes which are in the direction of progress while avoiding those which lead elsewhere.

Presentation at General Session
Friday morning, August 14

EXTENSION PROGRAMS TO IMPROVE MARKET ORGANIZATION AND FACILITIES:
APPRaisal OF CURRENT WORK AND FUTURE NEED

Laurence A. Bevan, Director, Extension Service
University of New Hampshire

I. The Lure of the Market Place

A. The attraction that marketing holds

1. What happens when buyers and sellers meet and exchange goods?
2. The sights, sounds, smells, decisions, and agreements that take place.
3. A stimulation to some persons at country point, in terminal markets, on exchange floor, in the retail store.

B. Viewpoint can be influenced by environment

1. In the Northeast, production, distribution and consumption all take place in the same area.
2. We see products as they pass from farm to retail counters.
3. Marketing long has been directly included in over-all extension program in this area.
4. Other sections, production problems close at hand, many market transactions take place in far-distant centers.
5. Extension concentrates more on production factors on the near-by marketing situations.

II. Recognition of New Situations

A. Concern with production does not meet present conditions

B. Comparing 1914 when Extension established and 1953.

1. Agriculture shifted from a type of self-sufficiency to commercial type.
2. Distribution revolutionized transportation, storage, processing, packaging, large retailing units.

3. Marketing problems multiplied.

- a. Production areas specialized and far from market.
- b. Farmers and consumers far removed from each other, not only geographically but in understanding.
- c. Much more processing, handling.
- d. Improvement in facilities and methods lags.

III. Extension and Marketing

A. A growing awareness that Extension should expand its marketing work

1. This does not mean much work has not been done before the Agricultural Marketing Act passed.

2. Supported by early conception of Extension broad scope.

a. President Butterfield's statement nearly one-half century ago: "The subject of marketing the distributive half of farming will be given as much discussion as the subjects bearing upon production."

3. Extension's legal backing.

a. Smith-Lever Act — states work shall be carried on with "the people of the U.S."

b. Bankhead-Jones and Bankhead-Flanagan both designate marketing.

c. Agricultural Marketing Act assigns educational phases to Extension.

4. Education influence.

a. Gives people understanding, change in attitude, readier to cope with situations.

b. "The investigator advances knowledge."

c. "The interpreter advances progress." (Glen Frank)

c. Extension, the interpreter.

IV. The Extension Marketing Job.

A. Extension works with people rather than things.

B. Extension can only suggest, lead, motivate, act as a catalytic agent. It has no authority other than that which sound information and methods may include.

C. Marketing objectives in extension are the same as those expressed in this workshop by others.

1. A better marketing system, better and quicker balance between consumption and production, reducing costs and losses, better use of products.
- D. To get the results of research and information from other sources applied so that improvements and adjustments to new situations will be made more quickly.

V. A Broad Base

- A. To deal with matters related to the care, handling, and exchange of agricultural products from farm to consumer.
- B. An across-the-board Program.
 1. With producers, handlers, and processors, consumers.
 2. Marketing problems reach far beyond the point of production (lamb illustration).
 3. Educational work with the farmer on his farm and with farmer organizations cannot go the whole way in solving agriculture's marketing problems.
 4. Extension, in my interpretation, was set up not only to work with farmers, but, more far reaching, to assist in bringing about improvements that will make farm and rural life better.

VI. Present Lines of Work

- A. Under Agricultural Marketing Act — In 1952 — was carried on in 43 states and 3 territories including 136 projects. It can be divided into four classes.
 1. Work on a commodity basis with producers.
 2. Work on a commodity basis with handlers.
 3. Work with retailers.
 4. Work with consumers.
- B. Producers
 1. Market information : Interpreting and disseminating market information on conditions movement, market quotations, both current and outlook, using news releases, bulletins, meetings, radio some television.
 2. Preparation for Market: Demonstrating use of grades, loading techniques, maintenance of quality, new packages.

3. Market outlets: Assistant in improving present and developing new marketing associations for assembly and sale, including facilities and methods.
4. Better understanding of market system: Costs, function, price determination.
5. Work with cooperatives: On business efficiency.
6. Methods used: Demonstrations (come and see) tours, meetings (large and committee), printed material, slides, film, strips, radio, letters, individual contacts.
7. Commodities involved: Fruits and vegetables, livestock, dairy and poultry, forest products, seed crops, cotton, cottonseed.

VII. Examples of Definite Results.

A. Progress has been made in all of the projects listed.

B. Specific examples:

North Dakota -- Potato bruising reduced 50 percent.

Missouri -- Value of different grades of cattle at auctions resulted in greater proportion of feeder cattle sold in higher grades.

Iowa -- Outlook information furnished farmers and handlers on soybeans, greater quantity stored, higher returns to growers, more even flow to market.

Indiana -- 1,600 retail grocers received training on improved practices and on using outlook material.

North Central States -- Quality loss on eggs reduced at farms and in consuming centers.

Wisconsin -- Producers shifting to fluid milk reducing volume for manufacturing, consolidation of plants is effecting savings.

Minneapolis -- Consumer education includes a 30-minute weekly food-buying program on television, rated top daytime show by 68 percent of housewives surveyed by television stations.

New York City -- Results of consumer program includes 100,000 food shoppers view week's food news on television, 2,000 leaflets sent out each week in response to direct requests.

C. This expansion of Extension's marketing work brought about with the support of the Agricultural Marketing Act.

VIII. Matters for Future Consideration

A. To continue to do a good job, there are certain conditions to be taken into account. Some of these include:

1. Extension should stay in the educational field.
 - a. There are "Hot Spots" in trying to bring about improvements.
 - b. Accept the idea of conflicts but present facts, show opportunities, have those concerned make decisions.
2. Extension and the prescription method.
 - a. Used to giving actual direct answers to apply to specific problems.
 - b. This not so applicable in the marketing field.
3. Local versus over-all approach.
 - a. Emergencies must be met but a forward planned program should be included.
 - b. Tackling only pressing problems will limit program to piecemeal results.
 - c. Can be very busy doing quick projects but should not mistake activity for accomplishment.
4. The teamwork approach.
 - a. Paul Nystrom clearly presented the need for this — in effect, with Research, Service and Education working together, quicker answers and quicker application are possible.
 - b. Extension without factual guidance will not be sound and could wither on the vine.
 - c. Research if not applied is not useful.
 - d. Extension has "know-how" for educational work but not authority. Essential features of marketing work entail need for enforcement of certain standards regulations — this to be done by service departments. Difficulties arise if one tries to mix authority with education.
 - e. Within Extension, marketing specialist can do only a limited job alone, commodity specialists help.
 - f. Administrators have a duty to perform to bring about coordination and cooperation.

5. Reporting results.

- a. A record of what is done,
- b. Useful in connection with requests for funds,
- c. Too many times generalities lack specific measures of accomplishments,
- d. This applies to:
 - (1) those individuals or groups with whom we work.
 - (2) our own administrators,
 - (3) our associates.

6. Well-trained personnel needed.

- a. Can sometimes make a good marketing man by transferring a commodity specialist to marketing work.
- b. Need much in-service training for that method.
- c. Capable of interesting and stimulating county staff in marketing situations.
- d. In my area county agricultural agents, home demonstration agents participating in retailer and consumer programs.

7. Work with various groups.

- a. Producers.
 - (1) much more needed in getting them to understand and use economic information.
 - (2) informing them of their relation to whole system.
 - (3) the effect of the demands of the consumers on their marketing methods.
- b. With the trade.
 - (1) approach them from their viewpoint.
 - (2) be willing to try a variation of Extension teaching method, specially trained person for special project.
 - (3) may need to work with individual firms.
 - (4) with retailers, go beyond display and practices, emphasize look at economic phases.
- c. With consumers.
 - (1) consider their viewpoint.
 - (2) do educational work rather than promotional.

IX. Special Comments.

- A. Additional finances are likely to come after significant results are appreciated.
 - 1. Often heard that we cannot do any more unless we get larger staff.
 - 2. One way is to outline a good program, do some work on it, make a dent, and then ask for more.
 - 3. Determine some priorities in projects, have observed specialists, county agricultural agents, home demonstration agents are actually devoting more time to marketing work.
 - 4. In early days of Extension, funds came hard until we earned our way.
- B. Hope to see Extension develop aggressive attitude toward marketing. Trend could develop toward English system — agricultural ministry for production, separate food ministry for distribution and consumption. Less integration likely.
- C. Criticism likely.
 - 1. Can expect adverse comments from individuals and groups.
 - 2. This can be used constructively.
 - 3. Conflicts are to be recognized but should not prevent undertaking program which involves trouble.

X. Education versus Research.

- A. A significant difference.
 - 1. Research tackles a problem and finds an answer. The project can be dropped and a new one taken up.
 - 2. Extension cannot follow the same pattern. To be effective, the new idea or method must be accepted and adopted by the multitudes concerned.
 - 3. In Extension, doing work in one area with one worker is not sufficient as is often the case with research.
 - 4. Consumer education carried on in one urban center, say New York City, does not reach consumers in the San Francisco Bay area.

5. Slow and quick acceptance of new proposals vary appreciably. Quick adoption of a new practice often comes if it is easy to apply -- shows immediate rewards. A specific, for a plant pest. A new package. Acceptance of change in diet is much slower.
- B. To a research person, educational progress may appear slow, but we are dealing with man who is not always logical -- many times highly emotional.
- C. Education is a continuing process and cannot be done efficiently by turning it on and off like a valve.

XI. An Over-all Integration.

I would like to see an integrated marketing program considered, starting with the farms out in the counties, working with them to develop sound specific farm management operating methods which would take into account the outlook for the demand of the product, the type of product to be sent to market, and how the product should be prepared for sale. This would deal primarily with the farm marketing picture in the agricultural agent's field. Next, following that product to market would be a part of Extension's job, working with the wholesaler and retailer groups, particularly retailers since they are the ones who come in closest contact with the consumers. Getting the products to the retail markets economically, having the products displayed attractively, and working with the growers to get the products put up the way they should be, would be the second step in this marketing program. The third step has already been developed in New England and in some other parts of the country by a consumer education program. This brings to the attention of the consumer:

- (1) when products are plentiful in the market;
- (2) the value of the product from a nutritional point of view;
- (3) how to buy products economically; and
- (4) how the product can be conserved in the home and utilized to the best advantage by the family.

If we can conceive of a food program that reaches from the farm to the consumer, I am of the firm belief that we have possibilities of integrating our marketing program and improving it in ways that we have never before tried to apply.

Report of Work Group A

SHIPPING POINT AND TERMINAL MARKETS

Members of Work Group

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Summary of Discussions of Work Group A

Suggested Areas of Research Related to:
Shipping Point and Terminal Markets

I. Pricing of products at shipping point and terminal markets relative to market organization and facilities is of major consequence.

A. Appraisal of price determining mechanisms in a dynamic marketing system is demanding of attention.

Problematic questions include:

1. Where and how are prices being made, that is, at the shipping point, terminal point, or elsewhere? What is the effect of each on producer's price?
2. What are the economic effects of bypassing terminal markets? (Problem of a widely dispersed market with price reporting based on a relatively small proportion of the crop passing through terminals.)
3. What is the relationship between terminal markets and shipping point markets as to the reflection of consumer demand back to the producer? Are the demand conditions reflected rapidly and accurately back to the country and are supply conditions reflected rapidly and accurately to the terminals?

B. Comparative returns to producers from marketing through alternative market outlets should be a subject for research. The marketing of livestock was cited as a specific problem area.

Aspects for consideration:

1. Net returns to producers and to society.
2. Services, prices and efficiencies.
3. Future pricing -- that is, contracting and its influence on dealers and producers.

(Linear programing has value in fitting recommendations to a dynamic marketing system.)

C. Researchers need to attempt an answer to the question of why do prices and costs fail (or appear to fail) to funnel products in a manner that appears to be in accordance with economic rationality.

Aspects for consideration:

1. Services supplied -- facilities.
2. Convenience in disposing of a product relative to increased profits.
3. Welfare demands of society.
4. Status quo versus energia.
5. Regulations and controls.
6. Cost of being economically irrational in a democratic economy.

II. Market regulations and control of shipping point and terminal market organizations and facilities have economic significance.

- A. Research is needed to determine the economic effect of market regulations on producers and society.
- B. Research is needed to determine the economic effects of trends in regard to public regulation.
- C. Research concerned with federal and state agricultural policy is a worthy endeavor which may be directed toward: (1) adjustments of markets under given policy conditions; and (2) adjustments of markets under circumstances that may prevail, providing policy conditions change.

- III. There is an urgency of research directed toward "Economies of Scale" investigations in regard to the organization and facilities of country and terminal markets.
 - A. Problems of horizontal and vertical integration must be included.
 - 1. This may point to an investigation of the economies of integration as such.
 - 2. The impact of integration, both horizontal and vertical, upon inter-firm and intra-firm economies, upon the producer, upon the consumer and upon the general welfare needs to be further investigated.
 - 3. An analysis of the economies of integration must be conditioned by the peculiarities and characteristics of the socioeconomic setting in which we operate.
 - B. Economies of scale relative to product specialization need further analysis at all market points.
- IV. Input-output relationships of factors involved in the shipping point and terminal markets need to be elucidated and clarified.
 - A. Physical arrangement considerations.
 - B. Alternative combination of input factors in the market firm should occupy an important place in this research work.
- V. The development of principles of facility planning -
 - A. It is proposed that research agencies develop the principles for use by industry (private firms). With the principles available planning can be done concerning details without the assistance of public agencies.
 - B. Facility planning is not to be classified as research but as a service. In contrast, the development of principles of facility planning is a function of research.
- VI. There is need for researchers to develop economic criteria which will permit an appraisal of where the functions might be performed to effect efficiencies.
 - A. A problematic question is: Have we conducted an adequate analysis to establish criteria which will permit recommendations in regard to the place of processing and grading relative to shipping point and terminal markets?

- B. As an aid in this proposed endeavor, one might well consider the function of research in detecting, delineating, defining and predicting trends in market organization and facility arrangement.
- VII. The Work Group recognized many more functions of research in regard to the organization and facilities of shipping point and terminal markets. May it be emphasized that the listed research areas are some of those areas which are demanding of attention in light of our present measurement of understanding.

The ways and means of performing the research functions suggested were assumed not to be assignments of this particular work group, nor was the job of listing valuable research already performed or under way an endeavor within the outlined scope of activity.

Service Programs in Market Organization and Facilities

- I. Service programs as conducted in most states fall in the following categories:
 - A. Those which are tied in directly with federal agencies in a cooperative agreement, such as:
 1. Federal-State Market News Service.
 2. Federal-State Crop Reporting Service.
 3. Federal-State Shipping Point Inspection Service.
 - B. Those which are entirely on a state basis, such as:
 1. Regulatory work in fruits and vegetables.
 2. Regulations regarding weights and measures.
 3. State pure food laws.
 - C. Those programs which are not a part of any federal program but which are closely coordinated with federal regulations, such as: State marketing agreements and orders which are supplementary to a federal marketing order.
- II. Responsibilities of service organizations (Bureau of Markets, etc.) toward shipping point and terminal market problems.
 - A. There was general agreement that service organizations must work closely with research and extension in dealing with such problems.

- B. In connection with some service programs, however, there are times when facts and information are necessary which can only be secured while working on a particular problem. Under such circumstances, a service organization must gather its own facts. With most shipping point and terminal market problems, however, service organizations should look to research for the answer to their problems.
- C. Cooperation and joint effort in planning research projects will assist greatly in placing the results in the hands of those best fitted to disseminate the information, whether it be a service organization or extension.

III. There is a definite need to provide more technical assistance to individuals, firms and agencies in shipping point and terminal market facilities, regardless of who does the job. This work group recognizes that the method of giving technical assistance, whether it is considered service or extension, depends upon the situation prevailing in the particular state involved. As a discussion group, we are in no position to decide individual cases.

The recent Food and Drug regulations on the contamination of wheat will illustrate the thinking of Work Group A on this point of view. These regulations were enacted and enforced before proper education on the requirements of these regulations were disseminated. No particular group assumed the responsibility of making known the requirements of the law. Thus, confusion and fear of seizure were experienced at the grain elevators. Many times, slight facility adjustments could eliminate contamination of grain. This is where a service organization might step in to help correct a situation at the local shipping point market. If, however, a series of meetings were to be held on these regulations, then it should be done as a joint effort between extension and the service organization.

IV. Marketing information.

Regarding livestock auctions, more emphasis needs to be placed on reporting prices, grades, and volume on the important livestock auction markets. There are many shipping point auctions where the volume of livestock handled exceeds that of many terminal markets, and, yet, on these auctions there is no current information on price, volume, or movement available.

It is the feeling of Work Group A that additional market news reports are also needed on other commodities, particularly in localized areas. This would tend to equalize prices from one producing area to another and to promote orderly distribution of farm products.

Some method needs to be devised to more accurately report the truck movement of farm products, particularly on a day-to-day basis.

The extension of market news reports should be expanded to include farm sales of many products. An example of this is the sale of livestock on individual farms. At present a livestock producer, selling at the farm has only terminal market reports and a few sketchy country sales reports to use as a basis for pricing his product at the farm. This is very significant in view of the large number of feeder cattle and lambs which are sold at the farm or ranch in the western states.

Extension Programs in Market Organization and Facilities

The role of Extension workers in the field of market organization and facilities was given major consideration by Work Group A. This included problems, responsibilities and programs as they relate to Extension work.

- I. How can our present staff of Extension workers devote more time to current problems, and, in our specific case, to problems dealing with shipping points and terminal markets? The opinion was expressed that it may be necessary to re-evaluate our present Extension programs and devote more time to current developments. In market facilities work, it would be highly desirable to have some in-service training before undertaking a specific market development.
- II. Extension marketing specialists must develop closer working relationships with market operators and members of the trade. In this day and age we cannot confine our Extension activities to producers. We must work with marketing agencies and operators in assisting them in modernizing their returns, which benefits will partially be passed back to the producer.
- III. The problems of market organization and facilities are far reaching in scope and require the thinking and knowledge of many disciplines -- such as, industrial engineers, the physiologist and the marketing economist. It was the feeling of the Group that Extension is going to have to work, at least for the moment, with present Extension personnel. Again, emphasis was placed on a certain amount of in-service training. At times a few simple suggestions to a market operator may do a great deal to improve conditions at that particular market. There are times when this approach would be more desirable than the recommendation that an existing market be completely demolished, and a new one constructed.
- IV. Extension workers must have a long-range program when dealing with market organizations and facilities. Extension should be in a position to reflect problems of marketing agencies. Extension workers should be more alert as to the needs for research and should anticipate research problems. In this connection, they should consult with research workers in developing research projects, not in matters of procedure, but in general principles and need. There

was general agreement that we need more basic and applied research; however, there are times when "fire-fighting" type of research is necessary. Basic research should be confined to trained research workers, whereas the "fire-fighting" research can be done by extension or service organizations. Better still, it might be done by all three groups working together.

There is a place for preliminary reports of research work and for the popular type of research publication.

- V. Extension has a responsibility in pricing. One of the functions of Extension should be to help develop more efficient market organizations, thereby bringing about better pricing mechanisms. Extension has the responsibility of assisting producers in setting up cooperatives to bargain or to market. We must also recognize the importance of non-cooperative types of business organizations. It was pointed out that it is Extension's job to advise farmers as to the need and desirability of a cooperative organization, and if conditions justify such action to even discourage their formation. In terminal market facilities the cooperative approach may be somewhat impractical, because of the many interests involved. It was pointed out that price consideration is often the motivating force in the development of a cooperative marketing organization.
- VI. Extension has a definite responsibility of getting farm organizations, receivers and handlers of farm products to understand the problems of shipping point and terminal markets. There is a job of explaining the present lack of adequate market organization and facilities to all segments of the marketing system.
- VII. In order to do an efficient job of marketing, there are times when an Extension marketing specialist must go beyond the state lines. This is particularly applicable in the field of shipping point and terminal markets. It is at times impossible to do the job of marketing within certain geographical boundaries. Regional extension marketing projects on a formal basis are at times highly desirable. There are also possibilities, however, of informal agreements or projects for extension marketing work which may cross state lines.

Report of Work Group B

PROCESSING, TRANSPORTATION AND STORAGE FACILITIES

Members of Work Group

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Summary of Discussions of Work Group

It was originally planned that this work group consider problems of transportation and storage, but its assignment was subsequently broadened to include processing. It was decided at the beginning that the extremely broad scope of the subject matter field, the smallness of the group, and the limited amount of time available would make it desirable to concentrate attention primarily on those parts of the field in which the members of the working group were most directly interested. The greatest concern appeared to be in problems of transportation, and individual members were interested primarily either in grains or fruits and vegetables. These interest factors had an important bearing on the framework around which discussions revolved.

Research Work

Frequently problems in transportation, storage and processing are so closely related that research on them needs to be carried forward on a joint basis. In some cases work in these fields should be only a part of a general economic study which would include the projection of trends in production, marketings and consumption based on consideration of underlying advantages, both natural and economic. For instance, the demands for storage, transportation, and processing facilities are being greatly influenced by the increasing importance of frozen fruits and vegetables. The growth of frozen orange concentrate has reduced considerably the flow of fresh fruit through packing houses and transportation agencies as compared with what otherwise would have been the case and as compared with the expectations of the trade. The Bureau of Agricultural Economics is currently carrying forward a study of the present position and potential of the frozen food industry with a view to appraising its effects on the entire marketing system, especially for fruits and vegetables. It is hoped that this economic study which will give important attention to expected future developments will assist the trade in adjusting to changing conditions.

Transportation

It was recognized that this is a neglected portion of the marketing field. While railroads can still be called the backbone of the transportation system of the country, the rapid growth of motor trucking, particularly the hauling of agricultural products by exempt carriers, has given rise to a host of problems on which comparatively little work has been done. For instance, shippers need to be provided with additional information which will assist them in selecting the most economical method of transportation. This choice will depend upon numerous factors, including the nature of the commodity, the distance to be moved, services required, conditions in the market of destination, etc. In order to make many of these studies, additional basic data are needed, particularly for trucks. Not only is information on charges, costs and services almost entirely lacking, particularly for the agricultural carriers, but the extent and nature of truck movement is largely unknown for a number of important commodities in major agricultural areas. The recently published study of grain trucking made by PMA in the Southwest revealed an important penetration of trucks in a part of the transportation field which traditionally has been considered to be dominated by the railroads. It has been reported that the results of this study came as a surprise to many railroad executives.

A broad problem related to that of selecting the most economical method of transportation and with implications for shippers, carriers, and governmental policy is that of possibilities for integrating rail, truck and water transportation of farm products. There is a basis for believing that the movement of certain commodities, and particularly for certain length of hauls, trucks have a distinct advantage because of cost, greater flexibility, possibility for rendering superior service, or other reasons. In other situations, rail or water transportation may be more efficient. Perhaps it would be desirable for the different carriers to give increased attention to improving their competitive position in areas of special advantage and to withdraw from operations which entail losses. Perhaps the passage of time would bring about the desired results even if no research is undertaken, but this is likely to take place only after marketing and transportation firms sustain losses expensive not only to them but also to producers and consumers. Much more adequate cost data and closer working relationships between research agencies and the carriers would be required to do an adequate job of research on these problems.

Much valuable work has been done and further research is needed on the protection of products and the maintenance of product quality during transportation and storage. Illustrations of work under way include that on methods of decontaminating grain cars, waste and spoilage on fruits and vegetables, and shrinkage in livestock during transit. Studies of methods of handling prior to shipment, loading practices, temperatures, distance moved, and other factors require the cooperation of economists and natural scientists, and frequently require coordination with research on harvesting and on handling in local markets and in markets of destination.

The group recognized the need for additional research on the transportation rate structure, including not only rates but also services, and the importance of special interrelationships existing between the rate structure and public policy. The situation is now generally characterized as being chaotic with many rates and rate relationships based on conditions which no longer exist or are ceasing to exist as a result of broad economic changes and the growing importance of truck movement with respect to which rates and costs are relatively unknown. For instance, the grain rate structure has been set up to encourage the flow of grain through large terminal market centers with respect to which accessorial services, inspection, and the privileges of diversion and in-transiting play an important part. Little is known as to the effect of the transit privilege on circuitous hauling or the extent of handling grain and grain products and the resulting effect on returns to carriers and prices to producers and consumers. What is the relationship between in-transiting and truck competition? Another special set of problems surrounds the movement of California fruits and vegetables to distant markets in the Midwest and East. The railroads will dominate these movements, and the increase in rates has been considerably less than for the hauling of agricultural commodities in general. Is it likely that cost and competitive relationships will permit this situation to continue? If not, what alternatives are open to shippers, and what will be the economic effects on them as well as on the carriers?

Developments in the transportation of both grains and fruits and vegetables are illustrative of situations in which transportation changes may have far-reaching effects upon the whole structure of marketing and pricing. For instance, the growth of grain trucking may render out of date past calculations as to the most desirable locations for elevators and for flour and feed mills, and perhaps bring about a large-scale bypassing of the local elevators in the grain marketing system. There is an opportunity and a need for research to be undertaken which will guide farmers, marketing firms, and transportation agencies in making adjustments to changing conditions.

The working group shared to a considerable extent the attitude expressed by Mr. Wilcox in his speech at the general session, in which he indicated that progress on transportation research might be helped if a somewhat new and fresh attitude were taken toward cooperation with the railroads. Research people in public agencies do have constructive cooperative working relationships with the carriers in some instances. However, there is a widespread feeling that the Department of Agriculture and the Experiment Stations are largely shipper minded and regard the railroads as antagonists. It is believed that the carrier should be approached from the point of view that it is recognized that they do need increased revenues during periods of rising costs if they are to remain solvent and improve their services, and that it is the desire of public agencies to work with them in an effort to make operations as efficient as possible so as to keep the need for increased charges to a minimum.

Storage

Many of the problems of storage and transportation are closely related. Reducing waste and spoilage in the storage process tends to parallel similar problems in transportation. In the case of grain storage, as has been indicated earlier, size and type of facilities and their location are in the process of being affected by the increasing use of trucks.

In some areas the need for storage facilities and the kind of facilities required should be appraised in the light of economic and technological factors affecting the production and consumption of commodities. For instance, in some grain-producing counties feed grains are shipped out during the harvest season, the farmer receiving the terminal market price less transportation cost. During the deficit season in the same year or perhaps during the following year if local production is short, livestock raisers buy shipped in grain, paying terminal market prices plus transportation charges. This situation needs to be studied with a view to determining whether a different pattern of location of storage facilities might not result in higher prices to sellers of grain and/or lower prices to buyers of feed.

Research in the field of storage cannot be conducted without regard to the effects of governmental policy. The current and probable future influence of policy and regulation is particularly important for storage and transportation facilities for grain. Research should be undertaken on such problems as the effect of alternative levels of production control and price support, and the influence of various methods of price support, including multiple price systems. Levels and methods of production control and price support not only have a direct influence on the size, nature, and location of storage facilities required, but also influence the division of the grain trade between domestic and foreign outlets and the availability and prices of grain for feeding. Any influence on the nature and location of resulting market outlets will have implications for storage and transportation.

Processing

Important changes are under way in food processing and the United States at the present time. This is particularly true in fruits and vegetables and is associated with increasing specialization in areas of production, the continued industrialization and urbanization of the consuming population, and the development of new products, particularly frozen foods. One of the first needs of research in this field is more adequate basic data. For instance, increased information is needed on the disposition of a wide range of products; that is, the extent to which they move to consumers in fresh or processed form, what portion goes through retail stores, hotels, restaurants, public institutions, and reprocessing channels.

Comparatively little work has been done on interregional competition in processing. In some areas waste disposal is a factor of importance. Research in this latter field requires the close cooperation of engineers, chemists, and others with economists. In some cases useful by-products may be developed from wastes which are at present polluting the streams or being disposed of at considerable expense. At the present time the Iowa Agricultural Experiment Station is carrying out a study of dairy waste disposal under a contract with the U. S. Department of Agriculture.

The working group believed that joint economic engineering studies of plant management and efficiency which had been successfully applied to packing house operations could be extended to the processing field. However, the application of these studies to processing undoubtedly will prove to be more complicated and difficult and will raise problems of obtaining the cooperation of large business firms which are coming increasingly to dominate the field of food processing.

It was recognized that research work by employees of public institutions is dependent upon developing effective cooperation with private business firms. Frequently this cooperation is difficult to obtain for a number of reasons. Among these is the belief on the part of large firms that they have adequate resources with which to conduct their own research, which will remain their private property, whereas results of studies made by public funds necessarily must be made available to the entire industry. Frequently business men fear that information obtained from them may be used for purposes of government regulation. On occasions, individuals, partnerships, and corporations look with suspicion upon overtures from public research agencies because they feel that in the past these agencies have aided and encouraged farmers' cooperatives. All of these are obstacles which will require much patience and considerable time to overcome.

Service Work

State and Federal activities in the service field fall primarily into three categories -- regulatory, promotion, and information. In discussing this work, it should be understood that the following comments have no reference to the division of jurisdiction as between agencies because responsibility for these activities varies greatly between the different states.

The regulatory work discussed by the group includes the administration of warehouse acts, inspection services, the determination and maintenance of grades and standards for a variety of different commodities, and the administration of regulations covering weights and measures, including the inspection of scales and the checking of packaged products to assure conformity with state laws and the rules of the regulatory agencies.

In many of the states a great deal of attention is given to promotional activities such as the introduction of improved storage and processing plants. Services of this kind include advice to groups or individuals interested in establishing the facilities on how they should be constructed and where the plants could be located in order that they may be of the greatest value to the communities served. Assistance is also often provided in obtaining the financing for the project and finally, guidance is afforded in selecting the internal equipment and methods to insure its efficient and economical operation.

Under the heading of information activities comes the market news service, which provides data on the volume of marketings, shipments, and prices in producing areas, as well as receipts and prices paid in destination markets.

How do regulatory activities relate to transportation? Let us take a current example. A considerable amount of grain is now being trucked directly from farms to flour and feed mills, bypassing the terminals where grades are usually determined. In such a situation, where and how should samples be taken and grades determined to see that the farmer gets a fair price for his grain? Again, some country elevators being bypassed in this situation are buying trucks and getting into the transporting business themselves. Warehousing laws may not be adequate to meet the present situation and may be even less satisfactory in terms of their ability to meet new conditions. At the present time a group of states in the North Central region is making a study of their state grain warehousing laws, their provisions, and the adequacy of their administration.

The activities of the states in regulating the types of containers to be used for the shipment of fruits and vegetables and, sometimes, the amount of produce that is packed in those containers, is closely related to their transportation, because railroads, too, provide in their freight tariffs the specifications for the containers which may be used. As a consequence, there is need for the coordination of current research on containers used for transportation and the regulatory function of the state agencies.

Turning to work in the promotional field, one of the major problems facing those who would establish new processing plants or market facilities is: Where shall we locate so that the product may move to and from the facility with the greatest ease and convenience and at the lowest cost? The location of railroad lines, the availability of storage or processing-in-transit privileges and the availability of good highways are essential points for determination, as well as consideration of the area to be served and the prospective markets to be reached. It is well, too, to investigate the newer methods and applications of transportation facilities. For instance, advances have been made in the techniques of transporting in bulk, commodities that used to be marketed entirely in packaged form where savings are made not only in the cost of the container but in labor as well.

Further, through bulk handling it is sometimes possible to avoid the use of traditional marketing services in getting the product from the plant or facility to the ultimate place of sale.

A problem frequently encountered in connection with the promotional activities of the states, is in the analysis of the results obtained by researchers, so that those which profitably may be applied to a particular situation may be chosen. The great trouble here is that the researcher studying the respective efficiencies of different marketing facilities or methods necessarily determines his facts and analyzes them in the light of the conditions under which the study is made. However, applied elsewhere, his recommendations may not fit a particular area or a particular facility because of local conditions. It is one job to determine the general principles which may be recommended for use in the setting up of a new facility and it is another job to select and apply the particular principles that are applicable to the local situation where the plant is to be built. The working group feels that there must be close cooperation between the researcher and those who use the results of his work if the best results are to be obtained.

Progressive developments in transportation may also bring problems in the collection and dissemination of market news. For example, when practically all of the fresh fruit and vegetables moved by railroad we had a well organized and efficient system of collecting and disseminating data on current shipments from producing areas and receipts at a large number of destination markets. Now, with over half of the fruit and vegetable marketings moving by truck, the rail shipments and receipts have come to mean very little. Further, the movement of rail carloads to central markets facilitated the collection of market price data. Movement by truck, much of it bypassing the wholesale markets where these data have been obtained, has presented a serious complication. More research is needed to establish new procedures for the assembling of market news data on motortruck shipments.

Another service which the working group feels would be of value is one which would provide farmers with information on the availability of storage, particularly in years of heavy production when the amount of the product to be stored exceeds the capacity of local facilities.

Many changes which are taking place with the assistance of researchers will mean problems for people engaged in service work. At the same time, the service people need the researcher and his findings, and the researcher needs their help to get the techniques and principles he has developed put into action. The working group believes that future problems will be more readily solved and research work made more effective through the closer coordination of research and service work.

Extension Work

It is believed that considerable information developed by research has been insufficiently disseminated and therefore is not in use. Such information should be studied to answer the question: Who can use it? After this question has been answered, the next question becomes: Are the current methods of dissemination getting the information into the hands of those who can use it?

A few of the facts developed by transportation, processing and storage research can be used by farmers. The channels used in disseminating production information may be used when farmers are the audience to be reached. This may not be as effective as it should because some county agents are not interested or lack competence in these relatively specialized fields.

Most of the findings of transportation, processing and storage research are applied only when the operators of processing plants and storage facilities and the top management of railroads and trucking firms decide to use it. Relatively little effort has been made to see that new information gets to these groups. Some examples of work now being done are: extension work done with cotton ginnery and creamery operators; the "service" program of the Farm Credit Administration with cooperatives engaged in processing, storage, and transportation; the work of industrial contact officers employed by the regional research laboratories of BAIC; and the work done by trade associations through their trade publications and persons they employ for this kind of work.

Strengthening the dissemination of the results of research in transportation, processing and storage involves two major problems. The first is developing more interest and competence on the part of county agents so that this type of information will be included in their work with farmers. The second is the development of more adequate organization and techniques for getting information to operators of transportation, storage and processing firms, and to the shippers and buyers who use transportation and storage facilities.

The second problem is the more difficult of the two and the working group discussed examples and possible solutions before suggesting some general principles that might be followed.

Considerable information is available that shows that fruits and vegetables can be shipped by rail with less expensive protective services than those now used. Shippers and f.o.b. buyers made the decisions regarding protective services and are the ones who could see that the money-saving methods are used. A handbook on protective services is needed. However, to get the practices adopted there is need for one person familiar with this particular field to spend a year or two contacting shippers and buyers. Only one person would be needed for the whole country as the number of shippers and buyers to be reached is comparatively small.

Research has shown that a large amount of grain is infested by insects during transit and that the insects live in the boxcar insulation. Replacement of present insulation with fiber glass would prevent this infestation. For this to happen, top management of the railroads must decide to spend \$100 to \$150 per boxcar for the fiber glass and its installation. One person assigned the task of giving railroad management the facts and getting the grain and mailing trade to insist on fiber glass insulated boxcars might get this practice adopted.

Based on these and other examples the group made four observations regarding extension work with operators of processing, storage and transportation facilities:

1. For any particular practice the number of operators who need and can use the information is small but teaching them is very important because so many of them make decisions that affect large operations.
2. The type of information to be disseminated is specialized -- the groups that need are specialized. Effective dissemination requires men who are specialized. In many cases the job assigned to a man could be the promotion of a single practice.
3. Men who can do the type of job that is needed are scarce. Individual states cannot afford to add such men to their staffs. Men employed to disseminate such specialized information could work effectively with the whole country as their geographical area of operation.
4. In many cases the best extension worker will be the man who has done the research. To do the job, he should be relieved of research duties for a year or two and should devote his full time to activities designed to get the results of his research adopted.

Report of Work Group C

RETAIL MARKETS

Members of Work Group

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Summary of Discussions of Work Group C

Discussion in Work Group C was limited to Organization, structure and facilities for retailing food.

Introduction

Retail markets are of the utmost importance in the marketing process since it is here that consumers' decisions are made and approximately one-third of marketing costs are incurred. To improve effectiveness in the organization and operation of retail facilities, and to increase efficiency in the services rendered will be in the best interests of producers, handlers, and consumers of food commodities.

The retail food industry has succeeded in bringing to the American consumer an incredible variety of high quality food in an increasingly more convenient form. This has been accomplished with a decrease in distributive margins even though wages of employees and most other costs have been increasing.

The trend during the past two decades has been toward a decreasing number of stores selling an increasing number and volume of items per store and per employee. It was estimated by the trade that due to the ever-increasing popularity of the larger, more efficient, and more attractive self-service stores, the larger stores now control a larger share of business than at any time in history.

Basic to the development of the modern low-cost superette and supermarket is the self-service concept and the development of industry-wide cooperation. All segments of the food industry are thinking in terms of the consumer, some to a greater extent than others. It is becoming more apparent that repeat sales will not be made until the retailer has sold the merchandise to the consumer, so all distributive agencies are teaming up with retailers to increase the efficiency of distribution.

Differences between chain and independent stores are decreasing with the increasing standardization of food and similarity of operation and practices. Differences due to size are becoming greater than formerly with the large super market having very little in common with the small corner grocery. As the retail food store becomes an outlet to move large tonnages of food with relatively low margins, emphasis is placed on efficient handling and skillful management.

The approach followed by this Work Group was divided into three parts. They are: research, service, and extension. An attempt was made to outline the needed program in each of these categories. The items covered in this report are intended to be only illustrative of the type of programs that should be considered. There was no consideration of the question of which agency should do the work.

Research Program in Retailing

The Work Group decided that the objective of research in food retailing should be broadly social as well as being directed to the ends of the individual firm. More specifically, the objectives should include an effort to reduce the costs of retail operations for a given set of services and quality of product delivered to the consumer or increase the services desired by consumers and higher quality of product at the same cost. In the first case, the incidence of reduced costs should be felt by producer, retailer, and consumer. In the second case, the consumer would most likely be willing to pay a higher price for the improved services and higher quality product and thus the incidence of this gain would again be felt by the producer, retailer, and consumer.

The procedure followed by the work group was first to review examples of recent research in the retailing of food products;^{1/} second, to outline needed research. The research program for the food retail industry was divided into five general categories. It should be realized that these categorical groups are arbitrary and include some overlapping of subject material. Also, the more specific items discussed under each heading are intended to be only illustrative of the types of research needed.

I. Economic Organization of Retailing Facilities: The retailing firm.

Research directed at reorganization of the resources used by the food retailing firm was considered one of the most desirable phases of work. The Work Group outlined several areas in which research is needed.

- A. Research is needed to determine the most efficient use of resources such as the combination of capital and labor. For example, the substitution of display equipment for labor in the introduction of the self-service method of selling. Further, the study of imput factor substitution should be accomplished in connection with alternative engineering plant design aspects such as: (1) departmental and item layout, (2) organization of food preparation facilities with respect to display and storage facilities, and (3) equipment arrangement and layout.

^{1/} See Appendix I for list of publications.

For example, studies have been made of labor-saving reorganization of meat cutting and wrapping rooms and speed-up arrangements at store check-out points.

- B. There is a need to determine the economies of resource use associated with the scale of operation. The relationship of average unit cost to size of firm needs to be determined.
- C. Studies should be made of the economies of resource use and cost associated with varying degrees of capacity of operation relative to total capacity.
- D. The alternative methods of financing of the retail store and the ways in which risk and uncertainty can be reduced should be given consideration.
- E. Research is needed to determine the desirable personnel policies, training programs, worker incentives, and supervisory techniques.

These examples illustrate the research problems associated with retail plant efficiency. Also, it must be recognized that disciplines other than economics, such as engineering and personnel management are integral parts of this research.

II. Economic Organization of Retailing Facilities: Industry level

This problem pertains to groups of stores as opposed to individual stores. It consists of the best industry or market area organization of the individual stores. Several areas of research at industry or market area level seem desirable.

- A. Horizontal and vertical integration of retail firms offer a field for analytical research. Questions as to the degree and economic feasibility of integration need to be answered.
- B. Size, number, type, and location of retail stores in a market area are factors to be considered in determining the most economical organization of the industry. Research of this type must be preceded by considerable study of the retail firm.
- C. There are many special problems of the retail industry. Some of these problems are:
 1. The effect of shifting population — migratory workers.
 2. The impact of drastic changes in purchasing power.
 3. The special consideration of small retailers who furnish extra services and conveniences.
 4. The impact of promotional activities of agricultural industry groups.

III. Buying, Selling and Pricing Practices

The trade generally considers this area of activities as the art of merchandising. It is here that many costs are incurred for the purpose of creating a demand for a particular item in a particular store. A variety of interrelated devices are used with very little knowledge available of the effectiveness of any of them. That knowledge which is available is usually highly colored by manufacturers and processors in favor of a particular product.

In this general problem area, a number of lines of research are suggested as illustrative of where the objective of increasing grower returns may be attained:

- A. Development of wholesaler-retailer relationships which will decrease the costs of distribution through more integration of the two functions.
- B. Pricing the individual store items to maximize sales and to reflect cost of operation including an evaluation of the use of special sales, lost leader selling, and multiple pricing.
- C. Evaluation of promotional advertising display, and point of sale material and activities.
- D. Determination of consumer desires and needs for the purpose of guiding management in store operation, merchandising programs, and furnishing consumer services.
- E. Development and evaluation of such merchandising devices as prepackaging of meat, self-service produce, and multiple-unit selling.
- F. Study of the pricing mechanism as it impinges at the point where the consumer makes his purchases. This would include such topics as
 - 1. Impact of changes in national purchasing power, volume of sales, quality, retail prices, and so on, upon prices received by producers of a commodity;
 - 2. Competition (i.e., substitution) among different food items for the consumer's food dollar;
 - 3. Intra-seasonal shifts in demand, particularly for seasonal products;
 - 4. Interrelationships between retail margins and costs for different products.
- G. Study of spoilage losses and how they can be reduced, within the framework of profit maximization.

IV. Impact of Technological Developments

Technological developments affecting the retailing of farm products may be classified as: (a) cost reducing innovations, (b) quality maintaining innovations, and (c) creation of new products and convenience innovations.

Self-service retailing is an example of a cost reducing innovation. It is desirable that research be continued which leads to increased retailing efficiency through reduced labor requirements -- the largest single operational cost factor in retail stores.

The development of frozen foods represents an innovation making fresh quality in perishable products of a seasonal nature available to consumers over a longer period of time. Additional research is needed to evaluate the possibilities of increasing grower returns through converting perishable items into storable products by freezing them.

The development of dry skim milk, condensed milk, and imitation ice cream represents new products which directly affect the normal pattern of retailing dairy products. Research is needed to evaluate their effect upon returns to milk producers. The development of new packaging materials which makes possible the retailing of food products in more convenient form may or may not lead to reduced marketing costs. In most cases, the addition of convenience innovations has increased marketing costs. Further research is needed on the development of new products which lead to the expansion of markets especially where production is in excess of demand at profitable prices.

V. Institutional Factors

Operations of individual stores and of the whole retailing industry are conditioned by various institutional factors. These have an impact upon sales and prices to consumers and hence upon sales and returns to growers. Some problems in this area have generated considerable discussion and controversy. Actual research, however, has not been extensive.

An example is the legal restrictions upon sales or prices for individual products. No sooner were the obstacles to the free sale of margarine removed than the same technique has been advanced with respect to imitation ice cream. What is the impact upon consumer, middlemen, the dairy industry and other segments of agriculture? Not only have ceilings been imposed during half of the last dozen years, but minimum prices for wines, milk, and other commodities are being set. Are these administered prices set to reduce margins or to permit distribution through outlets with high costs? How do they react on demand at the farm level?

A few other factors of an institutional nature which are of concern to researchers in agricultural marketing as they strive to understand, explain, and improve the farmer's share of the consumer's dollar are:

- A. What is the impact of regulation over health and sanitary conditions, (e.g., in fluid milk), over shopping days and hours, (e.g., in meat), and over truck movement (e.g., over state lines)?
- B. How do union activities with respect to jurisdictional rights, to packaging, and to featherbedding requirements influence the situation?
- C. Are present product standards and grades suitable or should they be considerably modified in certain cases and be extended to the consumer level? If so, what are the economic considerations and effects?
- D. What is the feasibility of extending market news and outlook services to the retail level?
- E. How do national, social, religious, and racial customs and holidays fit into the picture, and what, if anything, can be done to take advantage of them?
- F. Do the special problems of different retail groups have repercussions affecting the farm community?

Service Program in Retailing

This area is one in which an overlapping of interests can develop because of the lack of clear-cut lines of operational jurisdiction. It requires a complete understanding of objectives in its execution and a close cooperation between administration and workers of various agencies and those in the field.

I. Retail and Wholesale Market News

- A. Price reporting of wholesale and retail prices. The information would be used for operational purposes by the retailer and not as basic material for statistical objectives. A more extensive program of dissemination than the usual market news dealing with wholesale and shipping point prices would be needed.

In determining whether or not a program of this character is to be developed, it should be borne in mind that retail prices and margins vary considerably more than do wholesale prices and margins. Retail price reporting could conceivably affect these relationships and also the returns to the producer. Any such effects on the efficiency of the price-making mechanism need to be evaluated.

- B. Reports on supply outlook. This is concerned with individual commodities especially perishable ones. It would attempt to assist the retailer by furnishing him with probable beginning and ending shipping dates, quality, and quantity of supplies and other information of this nature.
- II. Grades and Standards - A service program to interpret consumer grades and standards to retail personnel. This is now being done in some states.
- III. Service to firms on an individual basis - This would relate to industrial engineering types of service.
 - A. At present, this service is being performed by:
 1. Trade associations
 2. Store equipment distributors
 3. Research workers who have performed research in retail stores and are returning the results of their research.
- In this type of service it is especially important that administrators decide whether or not adequate service is being provided already by existing institutions, both private and public.
- IV. Promoting the sale of food products
 - A. Such programs are now being handled along commodity lines by state departments of agriculture through marketing orders and agreements, by state advertising commissions, and through programs financed by other means.
 - B. Further assistance might be offered to retailers in determining what products should be promoted and how the promotional program could best be conducted.
 - C. A program in this area raises fundamental questions relative to its desirability such as:
 1. Does it promote additional trade barriers? (Example: advertising Wisconsin versus Massachusetts cranberries)
 2. Will it have benefits to society or does it merely transfer the consumer's purchase from one food product to another?
 3. Will such a program perform the task of preventing a commodity group from "going through the wringer" because of a long supply?

Extension Program in Retailing

The results of marketing research in the field of retailing may be made available by (a) teaching principles of retail organization, (b) by teaching facility planning, and (c) by demonstrating improved methods or practices. Recommendations which will be developed from results of research under the five headings of the research program proposed for retail studies can be "extended" to food retailers through the most appropriate method or combination of methods.

I. The Purpose - The purpose of an educational program in retailing is to furnish information and examples on principles, plans and practices to food retailers in order that decisions may be made on a program of action to improve the retail distribution of food products,

- A. Contact with retailers to determine the problems and need for information or assistance should be made the first order of business. Retail grocer associations, service-wholesalers, chambers of commerce and chain store associations are organizations which may cooperate in developing such a program.
- B. Development of a program involves the analysis of the problems, study of available research materials and the assignment of priorities.
- C. Interpretation of the results of research from the point of view of the retailer is a major activity in the development of such a program.

II. The Plan of Action - The plan of action involves the choice of media for disseminating the results of research. It will vary with the groups to be assisted and the types of research results to be recommended.

- A. Illustrated lectures at meetings of trade association or retail groups have been successful for introducing plans for facilities and new practices or methods.
- B. A demonstration of the improved equipment and/or method of operation under actual retail store conditions is one of the most successful and striking means of extending a proven and tested result of research to the retail field of operations.
- C. Publications should be available for those retailers that are interested in details of research studies and extension recommendations. They, however, should be supplemented by publication (in other media such as: newspapers, trade journals, magazines, radio or television) which will promote the educational program and stimulate interest in the recommendations and demonstrations.

III. Who should be assisted - Extension programs in retailing should be aimed primarily at teaching the "teachers" (those who will carry the information to store personnel).

However, if requested, the extension specialist should assist in training personnel and must make periodic inspections to determine whether the recommended procedures are being followed for maximum results. Assistance on the management level may be given to independent grocers, to service-wholesalers, to trade associations or sub-groups and to chain stores whether local, regional or national if such assistance is requested.

IV. What should be included - The results of research studies will be the basis for most programs if recommendations are to be made for decisions by management.

- A. Help in the physical layout of facilities and demonstrations showing better handling practices can be of considerable assistance to retailers.
- B. Training of personnel to use facilities and practices developed from research is another illustration of what to "extend."
- C. Improved methods of buying, selling and merchandising could be demonstrated through service-wholesalers to produce more effective results.
- D. Information and materials relating to the business organization of retail food stores, associations or voluntary groups may include standardized records and accounting systems for greater efficiency and improved inventory control.
- E. Educational programs on relationships with suppliers may include information on the benefits to retailers in the form of services and quality from wholesalers when the retailers demonstrate loyalty in their operations.

V. Evaluation of Activities - Evaluation of educational programs and plans of action could be based on the question whether we had "activity or accomplishment." In this new field, activities require continuous review. As the program unfolds, accomplishments being obtained should be measured. Otherwise, the extension worker may find himself burdened with numerous activities no longer appropriate for handling urgent problems facing the retailer.

Appendix I

Merchandising McIntosh Apples in Retail Stores. Bennett A. Dominick, Jr. Cornell University, Agricultural Experiment Station, Bul. 895, May 1953.

Retailing Prepackaged Meat. Robert C. Kramer, Michigan State Experiment Station, Special Bul. 385, November 1952.

Receiving, Blocking and Cutting Meats in Retail Stores. USDA, PMA, Marketing Research Report No. 41, June 1953.

Produce Department - Space Utilization, Gross Margins and Operating Costs in Selected Retail Stores, Charlotte, N. C., BAE. Marketing Research Report No. 36, June 1953.

Prices as Indicative of Competition Among Retail Food Stores, by Kenneth D. Naden and George A. Jackson, Jr., Journal of Farm Economics, May 1953, and Some Economic Aspects of Retailing Chicken Meat, Bul. 734, California Agricultural Experiment Station

Methods of Handling and Delivering Orders Used by Some Leading Wholesale Grocers, USDA, PMA, Marketing Research Bul. No. 13, May 1952

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Better Utilization of Selling Space, USDA, PMA, Marketing Research Report No. 30, November 1952

Checkout Operations in Self-Service Retail Food Stores, USDA, PMA, Agricultural Information Bul. No. 31, 1951.

Relation of Volume Meats to Operating Costs, USDA, BAE. Marketing Research Report No. 24, August 1952.

Methods of Determining Costs and Operational Efficiency of Milk Distribution Costs - New York City, Report of the Marketing Research Workshop, Purdue University, July 9-19, 1950.

Some Improved Methods of Handling Groceries in Self-Service Retail Food Stores, USDA, PMA, Marketing Research Report No. 7, May 1952.

Some Economic Aspects of Retailing Chicken Meat, Kenneth D. Naden and George A. Jackson, Jr., California Experiment Station Bul. 734. May, 1953.

Improving the Performance of Retail Food Store Cashiers Through Better Training, USDA, PMA, Marketing Research Report No. 48, June 1953

Packaging and Displaying Meat in Self-Service Meat Markets, USDA, PMA, Marketing Research Report No. 44, June 1953.

Appendix I(Continued)

How Some Wholesale Grocers Build Better Retailers. USDA, PMA, Marketing Research Report No. 12, May 1952.

Views of Independent Grocers on Wholesaler-Retailer Relations. USDA, PMA Marketing Research Report No. 42, June 1953

Report of Work Group D
PRINCIPLES OF MARKET ORGANIZATION

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Zvi Griliches, California	J. M. Tinley, California
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Summary of Discussion of Work Group D

The marketing system, as a whole, works quite well. It has attained its present organization as the result of research, education, and regulation. It is characterized by a dynamic nature, including constant changes in structure, operating methods, and costs. Some of these changes come about as a result of industry, research and experimentation. Others are fostered by state and federal agencies as a result of their own research and educational programs.

Problems are constantly rising within the framework of our present market organization. Locations that were once suitable for terminal markets become unsuitable because of transportation difficulties, congestion, shifts in population and other factors. Market demands for individual products change as a result of the development of substitutes, new processes, changing costs and the like. Agriculture and industry groups clamor for assistance in working out solutions to these and other marketing problems. Research tools are available for working toward these needed solutions. The answers to specific questions may be clouded, however, by considerations of such indeterminate factors as welfare, efficiency, institutions, and imperfect competition.

Efficiency and Welfare

Improvements in market organization and decreases in market costs are a normal result of our research efforts. A research worker designs an improved plant, a cheaper method, or a more economical container. Should the benefits of this decrease be passed back to the producers in higher prices at that level or should the consumer get the benefit through lower prices. Economic theory teaches us that the benefits will be divided between the producer and the consumer in accordance with the elasticity of demand for the product, and the degree of competition among the groups competing for the consumer's payment. Are our efforts equally fruitful

when the consumer gets the benefits as when the producer's position is improved? It would be difficult to justify a negative reply.

There is normally a time lag between the development of a more efficient plant or process and its adoption by the market agencies. Inefficient milk routes, packing houses, and terminal markets persist long after their inefficiencies have been revealed. Should we impose our will on these individuals and groups to force their adoption of what we think is best for society?

Normally we must wait for changes to be brought about by economic forces. Competition and substitution are mighty forces on the side of efficiency. The Extension Service and State Departments of Agriculture aid the process by their programs of education and regulation. In a democracy, it is usually wiser to use a maximum of competition and a minimum of legislation to attain desired efficiencies. Economic theory provides little or no help in decisions of this nature.

Pricing

Pricing was considered to be performed efficiently when currently established prices caused current production to move to the proper places, when future production is guided properly in accordance with the buying decisions of consumers, and when minimum costs and margins are distributed to necessary marketing agencies.

Certain basic difficulties were recognized in this general area. Current price reports are inadequate for many products. Prices fail to reflect quality and location. Cost factors required to evaluate price differences are usually lacking. In the livestock field, there is a basic lack of market price data by grades as well as a lack of data on transportation and shrinkage costs.

Transportation quite frequently is a cost which varies by levels of processing as for grease and scoured wools, live animals and carcasses, and boxed, crated or bulk produce.

Our current market structure has developed as a result of established price and cost differentials. Some inefficiencies have persisted because available price data fail to reveal the necessary facts to warrant a change. This is particularly true for prices based on the transportation rate structure. Current inefficiencies may be corrected or alleviated by research into existing price differentials or by establishing price data in areas currently poorly served.

Closely allied with price changes are demand elasticities based on known price relationships. The need for data on demand elasticities at variable price levels for different seasons and by geographical areas is tremendous. Demand elasticity changes with new products such as orange and lemon concentrates, but is still not known for such established products as broilers or pork. Before market prices can guide production efficiently we will have to speed our analysis of what today's prices mean.

Market Facilities

A great deal of progress has been made in the application of research to the development of improved market facilities and the operation of these facilities. Marketing researchers have borrowed some of their theory from other fields. The theory of the firm has been lifted from the field of production economics and applied with great skill to the marketing field. Cost curve analysis has been a useful tool in developing facilities with different sizes and volumes.

Economic models have been developed for most market facilities. Principles applicable to the models are also applicable with modifications to new structures planned at other locations or for other commodities. Terminal produce markets have been planned for so many locations that the pertinent engineering and economic theories are well known and quickly applied. Studies of processing facilities or retail markets involve some differences in the models but the same general principles are used. Similarly preparation of a model livestock auction involves the handling of a product which lacks the stability of sacks or boxes, but the research task can still be accomplished.

Naturally new difficulties are faced in each new field of work. Innovations in processing methods force a blind approach to each new situation. Control over volume is variable. Similarly, management fluctuates and can seldom be treated as a constant. Frequently operators of market facilities are not interested in minimum costs for the facility or for its operation. Preference for overly expensive construction, excess capacity, or expensive machinery may influence construction or operating costs without affecting the basic theories applicable to similar structures.

Perfect Knowledge

Pricing is based on consumer willingness to clear each market of individual items because of a given level of effective demand. Pricing is variable because buyers have different desires and imperfect knowledge of existing price differences. Transportation costs, perishability, consumer preference, and other factors keep prices variable.

Ideally, consumers would be fully acquainted with the relative values of the products available to them through an accurate and current buyers' guide. This guide might reflect such considerations as the relative nutritional value of commercial and choice beef, or the comparative food values of watermelons and turnips.

The current gap in knowledge is considerable. Consumers are guided by habit, by the recommendations of their friends, by price considerations, by nutritional data, and by advertising. Some worthwhile products are rejected while inferior products meet with flavor. Advertising interests would have us increase the use of this device as a means of increasing our knowledge. This would be helpful if it were keyed to inform rather than merely to influence decisions into a particular area.

Studies of consumer acceptance and consumer preference have been inconclusive. For example, studies in the citrus field have not kept up with the changing technology. Advocates of consumer interviewing justify their position on the basis of giving the consumer an opportunity to express his desires. It is essential that more be learned of consumer wants through properly conceived experimental designs. Since producers will continue to be motivated by their own relative efficiencies in selecting production items, a combination of producer cost and consumer demand data is required to give us any approximation to perfect knowledge. Prices will then continue to serve as a guide for both groups.

Institutional Barriers

In marketing, as in other fields, knowledge and theory are frequently far in advance of practice. Market changes usually cannot take place without causing economic loss to someone. Antiquated and congested wholesale markets in some major cities cannot be abandoned readily in favor of more favorable locations because of existing leases and related property rights. A change in location represents a change in values for all interested parties. It is not uncommon for the potential economic gain of the minority to block moves which are aimed at benefiting the majority.

Regulations established by local, state, or federal authorities to protect the best interests of the public in one period often become stumbling blocks to progress at a later period. Examples are common in the milk and fresh produce fields. A situation requires regulation; it establishes certain monopoly rights in the market, and these established interests fight for the maintaining of their monopoly position.

Producers of wooden boxes fight the adoption of cardboard containers. Burlap manufacturers oppose the adoption of paper substitutes. Labor unions oppose the adoption of certain types of machines which require less labor. Individual states oppose the introduction of competing products from other states.

We must obtain and retain the ability to see both the good and the bad in any new device or facility. It is equally foolish to adopt everything new wholeheartedly or to oppose all innovations. Progress should be expedited by the group that is in the best position to know the facts. It is our responsibility to examine all pertinent facts and to take a stand.

Report of Work Group E

MARKET REGULATION AND CONTROL

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Summary of Discussions of Work Group E

Agricultural marketing regulatory activities which are applied through governmental authority or permission, and which may limit or modify the freedom of action of the individual, constituted the universe considered by Work Group E.

A classification of activities was developed by the Group to clarify the components and boundaries of the subject, to identify the segments of most interest to the Group in order to direct the discussions and to clarify terminology applied to the work under review. The outline is not intended to be all inclusive. It is developed in detail only for those segments which the Group wished to explore or to understand better. The classification of regulatory activities is as follows:

A. As to function or purpose.

1. Health protection purposes (human, animals, and plants).

a. To prevent dissemination of pathogenic organisms.

b. To provide physical safety.

c. To insure against adulterants injurious to health.

d. To insure a minimum nutritional content of foods.

2. Economic purposes.

a. Developing market stability by influencing:

- (1) Demand
- (2) Supply
- (3) Price

- b. Redistributing income by means of:
 - (1) Subsidies
 - (2) Price supports
 - (3) Price discrimination (multiple pricing).
 - (4) Taxation and duties
 - (5) Supply control.
- c. Influencing product quality -- in the sense of physical attributes of the product.
- d. Modifying trade practices.
 - (1) Competitive rules, e.g., prohibition of rebates, advertising allowance, price filing, prevention of gifts, and auction rules.
 - (2) To avoid fraud and deceit.
 - (3) Establishment of charges and payments
 - (4) Market allocation
- e. Promoting or retarding change, e.g., illegality of sale of imitation ice cream in California in same stores as ice cream, and prevention of sale of milk in Iowa in gallon jugs.
- f. Insuring dependable services, e.g. licensing, bonding, and registration.
- g. Modifying structure of competition, e.g., cooperative action.

- 3. Security.
- 4. Retaliation.
- 5. Moral reasons.

B. As to administering a agency.

- 1. Federal.
- 2. State.
- 3. County.
- 4. Municipal.

C. As to forms of authority

- 1. Statutory,
- 2. Rules and regulations.
- 3. Administrative and judicial modifications, interpretations, and explanations.

D. As to methods of implementation of statutes.

1. Initiation of regulations, rules, and orders.

- a. Indication of need.
- b. Holding of public hearings.
- c. Findings of fact.
- d. Issuance of orders.

2. Information and research.

3. Compliance requirements.

- a. Licensing.
- b. Bonding.
- c. Record keeping.
- d. Reporting requirements.
- e. Audits.
- f. Inspection and certification.

4. Enforcement.

- a. Policing.
- b. Injunction.
- c. Civil and criminal penalties.
- d. Administrative action.

After delineating the scope of the discussion of the outline, it was decided to concentrate discussion on (1) evaluation of the impact of regulatory activities; (2) the responsibilities of various agencies in promulgation, continuation, and termination; and (3) techniques for operation of these agencies in executing their responsibilities.

The evaluation of the impact of regulatory activities was considered. This was broken down into three subtopics: (1) the need for regulatory activity, (2) the appropriate techniques which may be utilized to effectuate change in response to the need, and (3) the expected consequences of the regulatory activity.

These evaluations must take place in the initiation of regulatory programs, during the life of the program, and in considering the suspension or termination of the regulatory activity.

The Group indicated that need for the activities could be evaluated on the basis of several fundamental precepts, among them being:

1. Economic justification.
2. Justice.
3. Social well-being.
4. Political expediencies.
5. Enforceability or practicability.

The Group agreed to recognize the existence of all of these, and perhaps others, but confined its attention to the concept of economic justification and economic measurement of the need for regulatory activities. The Group further recognized that concepts based on traditional, ethical, or religious grounds tend to introduce bias and prejudice, and color analyses. Criteria considered important for economic evaluation were discussed and explained further by stipulating important assumptions which would have to be made in the process of evaluations.

Criteria for Evaluating Economic Justification of Regulatory Activities

1. Efficient use of economic resources.

Assumes static: a. State of technology.
b. Economic structure.
c. Demand function,

2. Economic welfare (income distribution).

Assumptions: a. Declining marginal utility of individuals exist.
b. Inter-personal utility measurement.
c. Income distribution independent of other criteria.

3. Stability.

Assumptions: a. Stability independent of other criteria.
b. Some index as a measure of stability, such as income, product supply, or price index.

4. Economic progress.

Assumptions: a. A goal of progress can be identified.
b. Indexes of progress can be formulated.
c. Progress is independent of other criteria.

5. Business structures.

Assumptions:

- a. The utility of each type of structure to society.
- b. The effect of business structures on other goals.

6. Economic freedom.

Assumptions:

- a. That maximum individual freedom is a desirable social goal in itself.
- b. That individual decisions lead to greater efficiency.

As an example of the procedure involved in initiating, developing and evaluating a commodity regulation, the California Milk Marketing Law was discussed by the Chief of the California Bureau of Milk Control. The initial expression of need, the process of petitioning for price control orders, the determination of market information, the hearing, the findings relative to the need for such orders, and the issuance of the orders were described. This was followed by a discussion of lawsuits challenging milk pricing orders for one marketing area. This served as an illustration of where a lack of research facts weakened the legal foundations of this order.

Responsibilities of the various agencies was the next major topic for discussion. The public agencies concerned with regulatory decision are (1) the research agency, (2) the extension service, (3) the service departments, and (4) regulatory organizations.

Research agencies should accept responsibility for analyzing the desirability of introducing, amending or modifying, and eliminating regulatory activities. Such inquiry may be instigated by a regulatory agency, by an extension service, by industry, farm, consumer, or other groups as well as by the research agency itself. Research agencies should, therefore, be prepared to conduct inquiries sought by administrative agencies as well as inquiries oriented to relatively basic regulatory policy.

Policy research should be oriented toward one or more of the fundamental precepts outlined above as evaluation criteria, and with a specific group or groups of society in mind as the agency to implement research results. A serious difficulty sometimes occurs in the maintenance of objectivity by the investigator. Biases inherent in the selection of criteria and the background of the investigator should be made as explicit as possible in the research reports.

The extension service responsibility regarding agricultural regulatory activity is to bring to the attention of regulatory, service, and research agencies problems encountered in the field which may need clarification, either through technical advice or research as may be deemed necessary, and to assist all segments of the industry to reach a better understanding of marketing problems and to present factual information regarding proposed and established market regulations and controls.

The primary responsibility of regulatory agencies is to administer the law by ascertaining need for regulation, assembling findings of fact, devising methods, holding public hearings, issuing appropriate rules or regulations, and aiding in the enforcement thereof. This responsibility is considered to be pursuant to and within the authorizations of the law.

Studies, surveys, and analyses must be performed by or for a regulatory agency to conduct properly many of its functions, such as determining the need for authorized regulation; drafting the terms; establishing the standards, tolerances, or measurements of compliance; enforcing the requirements; and amending the terms to facilitate the operations or the attainment of the objectives of regulation.

Responsibilities of regulatory agencies in studying or influencing policies outside those pertaining to administration as such are less clearly defined. Even though the agency might be regarded as the most authoritative source of information on some aspects of regulation and should be prepared to respond to requests for such information, research on legislative or public policy pertaining to such legislation is regarded as outside the province of a regulatory unit.

Any conscientious regulatory agency feels a keen responsibility for attaining the objectives of regulatory programs by working with the market participants to improve their functions without relying solely on the enforcement of regulations. Moreover, their intimate contacts with market operations and operators offer opportunity for constructive service. Preventive rather than corrective action is regarded as a responsibility of the agency and this leads to service activities accompanying regulatory activities.

Such service involves several types of activities including short-run problems of aiding industries in handling problems of emergency such as the disposition of temporary crop surpluses in local areas and the continuous provision of market information designed to help marketers to anticipate or keep abreast of market developments so they can better cope with them.

It was recognized that regulatory activities are fundamentally designed to facilitate or promote trade, but that they frequently accomplish this through restrictive measures imposed on individuals, firms, and groups. From historical experience, the more complex the society or commerce with its attendant specialization and greater interdependence of groups, the more regulatory activities are demanded to assure uninterrupted trade which is essential in marketing agricultural products. While recognizing this trend, each proposed regulatory device, as well as existing regulations, should be carefully evaluated on the basis of the criteria presented in this report in order that the public interest be served.

Report of Work Group F

ECONOMIC AND ENGINEERING METHODS IN MARKETING RESEARCH

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Summary of Discussions of Work Group

Broadly classified, marketing includes the assembly of farm products, their processing and packing, transportation, terminal market operations, and wholesale and retail distribution. Each phase is itself a process within which there are many operational components or "stages." Experience indicates that similar types of jobs are performed in all phases of marketing. This leads to the presumption that, if marketing research is analytical, the methods of study -- and frequently the results -- in one phase may be applicable in other phases. The possibility of developing an innovation of sweeping and revolutionary character that results in major cost reduction. Changes of this sort, however, are rare. More commonly, we may expect long-run improvements to consist of the aggregate effect of numerous small improvements in the individual stages of different phases of marketing. Whether the outlook is for an unspectacular accumulation of small improvements in various stages or is for major innovation, a sound approach requires that research methods and the presentation of results be designed to show the extent to which costs and output in individual stages are affected by changes in method. This procedure should also be extended to show the impact of changes in technique in any stage on total costs in a given process, on costs in a production area, or in an entire industry.

Relationships of this sort do not stand out from masses of data but are developed with the aid of very carefully formed theories and hypotheses. It is important that the formulation of a theoretical framework precede any research for the theoretical concept will affect the types of data collected, the conclusions drawn, and, in general, the design of the experiment. While it is not possible to present a theory for marketing efficiency research in this paper, several theoretical concepts may be noted.

Theoretical Concepts

A theoretical framework for studies of efficiency in the production of marketing services can be developed by elaboration of the conventional theory of the firm. This involves introduction of the following ideas: (1) production processes actually involve many separate operations, or "stages," in contrast with the single stage processes usually assumed; (2) the rate of output may be varied by multiplying the number of identical production units employed; and (3) because rates of production do not always correspond directly to rates of consumption, or sale, total output for any period commonly is varied by changing hours of operation per time period.

Expansion of output through time, with constant rate of input for each factor of production, results in linear input-output relationships rather than the curvilinear functions that reflect the diminishing returns resulting from intensification on fixed factors of production. Similarly, linear functions will be found where output is expanded by varying the number of identical factors without intensifying on the use of any of these individual units.

Cost functions developed within the above framework will be continuous in the time dimensions but discontinuous in terms of rates of output in contrast with the continuous functions of conventional theory. Moreover, the nature of many inputs limits the substitution possibilities among production services in the short run. For example, labor is not substituted for mechanical power in the short run nor can labor be substituted for energy required in process heating or cooling.

When production processes are visualized as consisting of numerous separate stages, the development of a long-run cost, or "planning function" -- commonly described as an "economics of scale curve" -- becomes a problem of integrating the alternative methods of operations available at each stage so as to obtain minimum production costs at any rate of output. Each point on the long-run cost curve defines a plant representing a specified set of equipment, units, buildings, and organization.

Another pertinent aspect of production theory is that in the long run all factors are variable. While this could also be true for the short run, it rarely is so because every process involves durable goods that are fully consumed only through use in several different production periods. Once durable factors are purchased, these elements become fixed. In fact, we might say that we have a "plant" as soon as one or more factors in a production process are fixed. Thus defined, a "plant" may be canning or packing plant, a terminal market, an auction, a retail milk delivery route, or a harvesting and assembly process.

What Kind of Study is Required?

From a recognition of the stage organization of production processes, it follows that aggregate cost studies may reveal little with regard to the effect on costs and efficiency of variations in individual stage techniques. This puts an especial burden on accounting cost studies because accounting records alone often are not detailed enough to permit cost allocations to particular plant stages. Moreover, it is difficult to establish meaningful relationships between allocated costs for particular stages and rates of output; there are usually significant variations between prices paid in different plants for variable factors purchased in a given period and in prices paid for durables purchased in different periods.

Some of the difficulties in purely accounting studies can be overcome, at least in part, by direct observation and measurement of particular plant operations and by the use of physical reference data from engineering. Depending on the nature of the problem, the types of data available, and the objectives of the study, this may involve a heavy reliance on engineering data, or engineering data may be used only to supplement and "rationalize" accounting record data.

Another consideration is the need or desire for innovation. If new methods are the goal, rather than improved organization with existing techniques, the most essential ingredient is an idea. This involves asking a series of pertinent questions about every process and operation. We need to ask: What is done? How is it done? Can it be done more cheaply or better? Is it necessary? and can the several different operations be better coordinated? Many of the most successful innovators ask these questions intuitively. With such persons change often comes by hunch or by accident. While engineers and economists must be alert to such possibilities, their special joint talents lie in the use of systematic tools for job and process analysis and measurement, for machine and process design, and for cost analysis.

Engineering Methods for Estimating Physical Inputs and Costs

In research which seeks to improve efficiency through innovation or through careful analysis of the possibilities in better organization of existing, or potential, stage techniques in an integrated plant, numerous engineering tools will be found useful. These include the following:

Descriptive Data - A detailed analysis of stage and plant operations requires descriptive information regarding the nature of the process, the sequential relation between different operations, the work methods on individual jobs, and plant layout and process "flow". This may involve the preparation of floor plans and process flow charts and detailed descriptions of the number of personnel on various jobs and the operations performed by each worker. Such data are useful in connection with engineering studies of work methods and plant organization and in analyses of accounting records.

Work Measurement - Engineering methods of work measurement are designed to provide analytical data for use in work methods improvement and in establishing standard production rates for each operational component of the plant process. Of the numerous procedures available, the following are noted:

Time study which involves a stop-watch measurement of unit time requirements per production unit on a particular job or measurement of time requirements for elements of operation. It is especially applicable to jobs involving repetitive operations.

Production study which is essentially a time study modified for application to jobs that contain many irregular elements or on which the cycle time per production unit is long. The study consists of a time log of events occurring on a particular job, plus a record of output for the study period. By sorting the separate chronological observations into like groups, unit time requirements for each operation can be obtained.

Work sampling (frequently called ratio delay) which is a sampling procedure based on instantaneous, "flash" observations of the operational status of a machine or worker. These observations form the basis for estimates of the proportions of the observed production period that are spent actually working or in performing particular operational elements. Such proportions applied to the total elapsed time and output for the observed production period yield estimates of the proportion of delay time and of the net working time per operational element or per production unit.

Standard data which consist of a micromotion technique that can be used to estimate standard labor requirements without direct measurement. It requires a detailed -- in fact, a minute -- description of each operation and manipulation involved in a job. Standard time requirements for these microelements are then taken from motion and time tables. The sum of such microelement times is the estimated standard time for the job.

Estimating Non-labor Variable Costs -- The operation of plant equipment involves variable inputs other than labor. Obvious examples are fuel or electric power. An analysis of plant operations by separate stages requires that the physical quantities and costs of such inputs in relation to rate of output be determined for each stage. Plant accounting records rarely yield such data, and these relationships must be developed by other means. In some instances a direct measure of rate of input may be possible. Electric power requirements, for example, may be measured directly with a watt-hour meter or with a portable "clamp on" ammeter and these measures of physical requirements converted to costs. In instances where direct measurement is not possible or is not convenient, energy requirements may be synthesized from standard engineering reference data, and from such estimates machine capacities and variable operating costs may be computed. Problems to which this procedure might be applied include process heating or cooling, pumping process fluids, and mechanical elevation of materials.

Estimating Costs of Durables — Many factors of production are not fully consumed in a single production period. In some processes the costs of such durables constitute a large proportion of total production costs. Even in processes in which the costs of durables are relatively small, they may be a decisive factor in the selection of stage techniques inconsistent with efficient plant organization. Two objectives should guide the preparation of estimates of durable costs. For comparison of costs with different work methods and equipment, the estimates must be standardized as to the quantities of physical plant required in relation to rate of output and as to level of prices. In addition, the cost estimate should provide as useful a basis as possible for estimating expected costs over the use life of the equipment. These objectives seem to be met most satisfactorily by engineering estimates of current replacement costs. This involves the use of production standards developed from work measurement studies for the various plant stages to construct standards as to the physical quantities of equipment and buildings required in each stage and for the entire plant in relation to rate of output. Based on these standards, engineering estimates may be prepared of the quantities and costs of equipment and of construction materials and labor required to provide buildings and other durable factors.

The real costs of durables can be determined only by an accounting of all costs actually incurred throughout their use life. For analytical purposes, however, this historical record is not satisfactory. A forecast is required of expected costs. To put the costs for durable factors of varying use life on a comparable basis, these forecasts usually are computed in terms of expected average annual costs. This usually is done by applying a percentage to the current replacement cost which reflects a best estimate of expected future annual costs on the investment for interest, taxes, insurance, fixed repair expense, and depreciation. Such estimates obviously are subject to risk and uncertainty. Some of the risk elements are incurable, and this might serve to reduce the variation in particular cases between expected and realized costs. However, there are no available means for resolving uncertainties as to the physical use life of durable factors as to their technological use life as affected by innovations in production techniques or product or as to future trends in prices.

These elements of uncertainty have led to differing views as to evaluation of expected average annual costs. One view is that investment should bear an average charge only sufficient to maintain the industry. In contrast, some businessmen and cost analysts follow a "thumb rule" that investment should not be undertaken unless it can be completely recovered in a short period, say, 3-5 years. This investment rule is not a good indicator of expected costs for it is heavily weighted with the expectations and alternative profit opportunities of individual firms. This fault may be objectionable on definitional grounds, but of more importance is the fact that, by obscuring the cost picture at each stage of plant operation, such rules may seriously bias the process of technical planning for efficiency. It seems appropriate to attempt

a best estimate of expected costs and to make the entrepreneur's evaluation of the investment problem a separate matter.

Stage and Plant Cost Functions

A key element in studies of plant efficiency is the development of cost functions for the separate plant stages. The initial step in this process is to develop standards of output and equipment requirements for each operational component. These standards are obtained by synthesis which makes use of the results of work measurement studies, analyses of plant accounting records, or of joint analyses of these two types of data. On the basis of these standards, estimates of average annual fixed costs and of variable costs per hour are obtained for each component. The aggregate of the fixed and variable costs for each component operation yields a stage cost function that relates average annual fixed costs per year and variable costs per hour to rate of output.

Depending on the objectives of the study, the production standards used in developing stage cost functions may be designed to reflect either the average performance observed in the work measurement studies or an "efficiency standard" that exceeds the average rate of performance. An "efficiency standard" represents the level of sustained performance that could be expected under conditions of efficient operation but not necessarily a peak observed rate. Its use is appropriate in studies of plant efficiency in which it is desired to determine the relative efficiency of several different methods of performing the operations in a given plant stage or in the development of long-run plant cost curves. The use of an "average performance" criterion is appropriate in studies which may form the basis for margin or price regulation, for example, studies in markets under price regulation of the costs of store delivery of milk in relation to volume per stop.

Plant operations have been visualized as consisting of numerous stages with the possibility of choice between several methods within each stage and with many different possible combinations of separate stage methods to form numerous variations in plant organization. The development of a long-run plant cost curve consists of finding the combination of stage methods at each rate of output that results in least total plant cost. Conceptually, this process of selection and aggregation is simple, although practically it may become quite complicated because of the possible interrelations among the various stages and the discontinuities in the separate cost functions. In some instances, the technique of linear programming might be used to facilitate this process of selecting optimum combinations.

A sample result of the synthesis of a long-run cost function for California pear packing plant is given in Figures 1 and 2. Both diagrams give long-run season costs in relation to rate of output for a specified proportion of packed and cannery fruit and for several different lengths of operating season. Figure 1 illustrates a step in the development of the final long-run function. It will be recalled that the various stage cost functions tend to be discontinuous

and, therefore, the total cost function also will be discontinuous, multiplied many times. This creates a practical problem in computing the total cost function. To avoid excess calculations, costs were computed for discrete but closely spaced points. These are the points plotted in Figure 1. Smooth functions are fitted to these points and give a very close approximation to the actual discontinuous total cost function.

Similar computations were carried out for other proportions of packed and cannery fruit. Consistent relations were noted among these separate scatters which permitted the long-run total cost function to be represented by a single multivariable equation. A final mathematical appreciation is given by the expression

$$C = 2,766 + 16E + 438V_p + 322V_C + 5.23V_pH + 1.56V_CH$$

where C is the total cost per season, H represents hours of operation per season, V_p is the rate of output of packed fruit per hour in 1,000 pounds, and V_C is the rate of output of packed and cannery fruit. The correlation coefficient for this regression is .99992.^{a/}

This function is represented in average terms in Figure 2 for a specific field proportion of packed and cannery fruit and for several lengths of season. In this form, the curves suggest the economies that may be associated with large-scale production. This is an important result of studies of internal plant efficiency and an essential component of studies of area and industry organization.

Evaluation

Engineering methods of work measurement and cost syntheses are useful tools in the development of improved work methods in particular operational stages of the various marketing processes and in evaluating the efficiency of different methods of performing particular jobs.

The possibilities of cost reduction in existing plants through such application of economic-engineering techniques of analysis to stage and plant operations have been demonstrated in numerous studies by the agricultural experiment stations, the U. S. Department of Agriculture, and commercial enterprises. The usefulness of these techniques in providing data essential to the synthesis of long-run plant cost curves in the determination of economies of scale and in studies of area and industry efficiency has also been demonstrated.

^{a/} This coefficient relates to the correlation between the continuous mathematical function and the synthesized costs for selected rates of output, rather than to correlation between estimated and observed costs in actual plants.

A major disadvantage of these procedures, especially with plant processes that require much labor, is that data collection and analysis may have to be carried on in great detail and, hence, be timeconsuming and costly. Several developments may be hoped for, however, that will help in this regard. These include:

1. Continued improvement in the methods of work measurement and cost synthesis with good prospects of developing greater reliability of measurement and reducing study-time requirements and costs.
2. The development of "standard data" for typical plant jobs and for certain kinds of durables -- for example, building construction costs, which can be made available as reference data for use in new studies thus reducing the time required for field data collection and analysis.
3. Effective use -- in studies relying primarily on accounting records -- of limited, and strategic, types of engineering data with the aim of better rationalization of accounting record data and improved prospects for analytical work based on accounting records.

Three fields of application for engineering in marketing research are evident. These include the direct participation of engineering in its traditional role of process analysis and process and machine design and development; joint work in process development and in studies of costs and efficiency by economists and engineers; and the borrowing of more readily adapted techniques of engineering analysis for use by economists in studies of marketing efficiency. The best approach will depend on the problem, the available data, and objectives. Continued work in this field should result in a growing body of experiences and data that will enhance the work of both economists and engineers in the improvement of efficiency in marketing.

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Total cost per season - 1,000 dollars

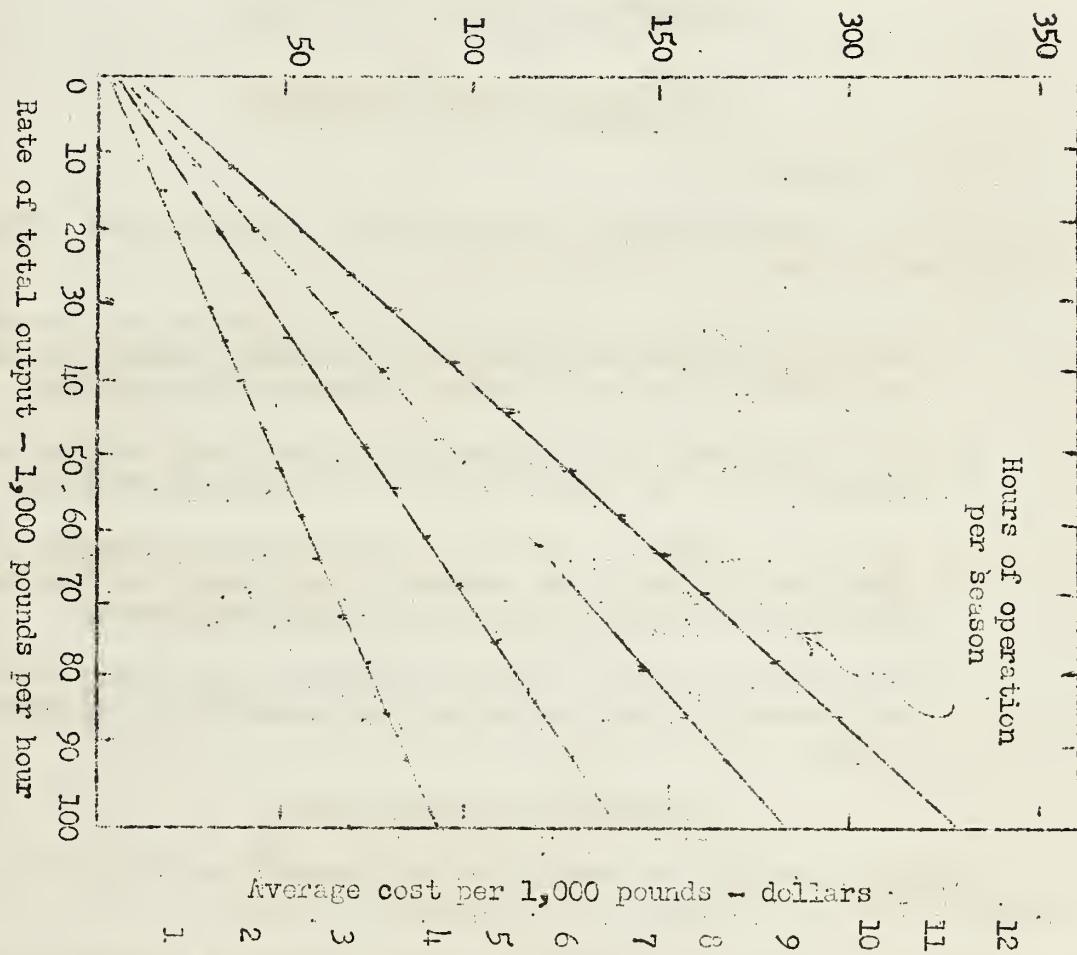


Figure 1: Total cost per Season (Excluding Materials) in Relation to Rates of Total Output, Assuming that 80 Percent of the Fruit is packed

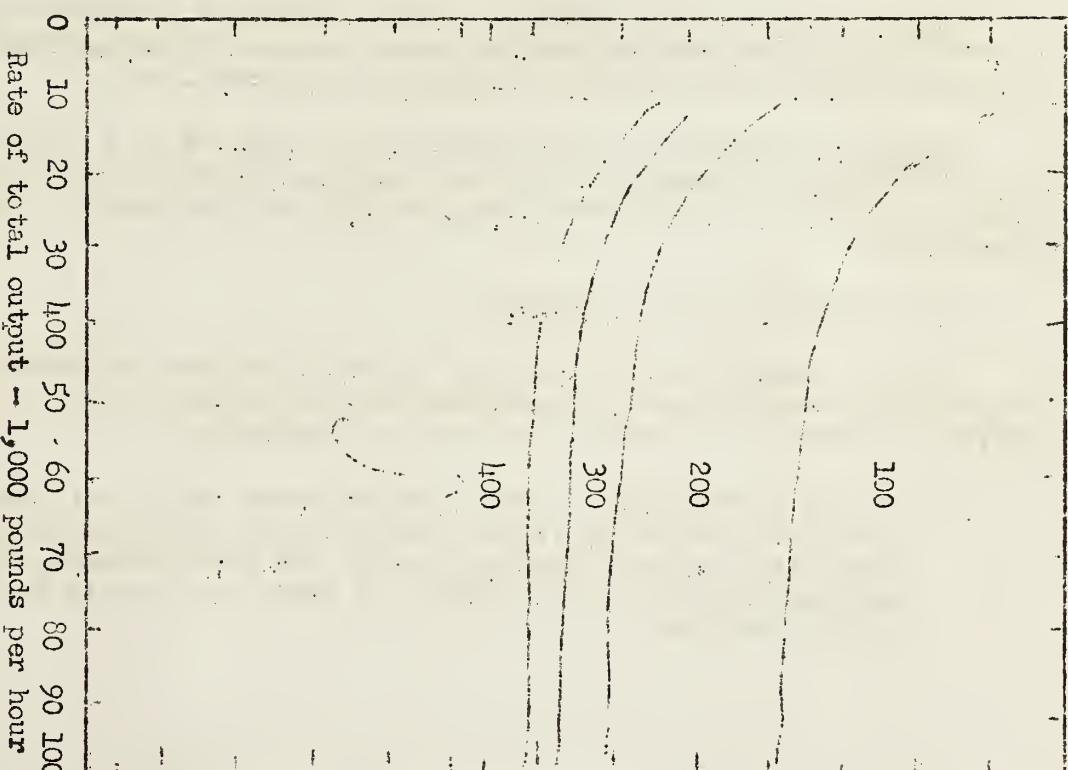


Figure 2: Average cost per 1,000 pounds (Excluding Materials) in Relation to Rates of Total Output, Assuming that 80 Percent of the Fruit is Packed

RESOLUTIONS ADOPTED BY THE WORKSHOP

Resolutions Regarding Procedure

Be It Resolved:

That the Workshop proposed for next year, on the subject "Effective Buying and Selling", is desirable, and

1. That the attending group be enlarged to include home economists, marketing research personnel in independent research agencies, and private firms and marketing information specialists;
2. That preparation and presentation of Work Group reports be arranged so as to permit more time for group discussion;
3. That the chairman of each Work Group prepare in advance a tentative outline of the subject of his group, and that he also prepare a list of suggested reading references.
4. That consideration be given to planning a Work Group which would concern itself to problems in comparatively undeveloped areas.

Resolutions of Appreciation

Whereas, the 1953 National Marketing Workshop has been of inestimable value to those who attended and participated, and,

Whereas, particularly valuable lessons have been learned from our interchange of ideas and information among research workers, extension representatives, and service and regulatory personnel, and,

Whereas, the success of the Workshop has been due in a large measure to the thoughtful planning and patient execution of innumerable details which contributed to the convenience, comfort, and enjoyment of those in attendance,

Now, Therefore, Be It Resolved:

That the members of the Workshop do hereby express individually and collectively their sincere appreciation to all who have had a part in making the Workshop a success, and more particularly:

1. To the Association of Land Grant Colleges and Universities, to the Organization and Policy Committees of Experiment Station and Extension Service Directors, and to the Commissioners, Directors, and Secretaries of Agriculture for their sponsorship and support of the Workshop;

2. To Ray Bressler, Harry Trelogan, Barnard Joy and their associates, and to the Planning and Advisory Committee for their effective efforts in planning and executing the Workshop program;
3. To the University of California and to its local staff for its generous hospitality, and for the efficient handling of the many details incident to the housing, comfort, entertainment and enjoyment of the delegates;
4. To the several chairmen, secretaries and consultants for their invaluable services on behalf of the Workshop as a whole, and on behalf of the particular groups they served;
5. To all those who made contributions in the form of addresses, papers, or as discussion leaders.







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